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

Academic Program and Course Description Guide

2023-2024

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are

followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: ....Wasit University.....

Faculty/Institute: ....College of Education and Pure Sciences.....

Scientific Department: ....Computer Department.....

Academic or Professional Program Name: ....Bachelor.....

Final Certificate Name: .....Bachelor of Education.....

Academic System: ...Annual.....

Description Preparation Date: 2023–2024

File Completion Date: 3/3/2024

Signature:

Head of Department Name:
Assist. Prof. Dr. Esraa Saleh Alomari

Date: 28/3/2024

Signature:

Scientific Associate Name:

Assist Prof. Dr.Mahdi Ahwan Al-QuraishN
Asst Dean for Academic Affairs
& Graduate Studies

Date: 28/3/2024

The file is checked by: Saja Hussain Dilfy

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 28/3/2024

Signature:

Approval of the Dean

Prof.
Dr.Ali H. Shuaa Al-Tale
Dean of Education College
for Pure Science

1. Program Vision

The Computer Department aspires to leadership and excellence in the field of computer science education studies, achieving quality standards and program accreditation, making it an outstanding academic and research department at the local, Arab, regional, and global levels.

2. Program Mission

Building individuals to become teachers and educators equipped with theoretical and applied knowledge in the fields of computer science and education, ensuring sustainable human development, in accordance with the requirements of the era.

3. Program Objectives

1. Prepare teaching staff to supply middle, high, and preparatory schools with the necessary teaching skills for computer science subject through the department's scientific programs and activities to create a generation committed to the ethics and values of the profession.
2. Prepare academic cadres in the field of master's studies in computer science specialization to meet the requirements of the job market, and support the educational and pedagogical process in our beloved Iraq.
3. Contribute to serving the community and enhancing continuous interaction between the college and scientific and social institutions to achieve community partnership and implement the motto "The University in the Service of the Community".
4. Produce rigorous scientific and educational research in the field of computer science that addresses issues enriching scientific knowledge in this field.
5. Work on improving and developing the capabilities and skills of faculty members and all staff at the college to ensure achieving comprehensive quality management in scientific and administrative areas.

6. Obtain national academic accreditation for the computer department from educational quality assurance institutions.
7. Develop computer department laboratories in line with laboratory quality.
8. Activate mechanisms of mutual cooperation and openness to universities and various educational institutions at the local, regional, and international levels in a manner that includes all components of the educational system.
9. Collaborate with other departments of the college to enter global rankings.

4. Program Accreditation

So far, accreditation standards for educational colleges have not been obtained, as program accreditation standards for educational colleges were approved on 21/2/2024, according to Circular No. JD/A 905 dated 22/2/2024.

5. Other external influences

None

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	39	190	100%	Core+Optional
College Requirements	15	52	38.46%	Optional
Department Requirements	19	120	48.7%	Core
Summer Training	1	4	2.56%	Core
Other	1	4	2.56%	Core

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			Theoretical	Practical
First	103CsSp	Structured Programming	2	2
First	102CsLd	Logic Design	2	2
First	109CsDs	Discrete Structures	2	–
First	104CsCo	Computer Architecture and Organization	2	2
First	101CsMa	Mathematics	2	–
First	108CsEs	Educational Psychology	2	–
First	110CsHr	Democracy and Human Rights	1	–
First	107CsAl	Arabic Language	2	–
First	105CsBb	Foundations of Education	2	–
First	106CsEl	English Language	2	–
Second	220CsMm	Numerical Analysis	2	2
Second	212CsDa	Data Structures and Algorithms	2	2
Second	219CsOo	Object–Oriented Programming	2	2
Second	218CsSa	Systems Analysis and Database	2	2
Second	211CsCt	Computational Theory	2	–
Second	213CsMp	Microprocessors	2	2
Second	216CsEm	Educational Management and Secondary Education	2	–
Second	214CsRm	Curriculum and Textbook	2	–
Second	217CsDp	Developmental Psychology	2	–
Second	215CsEl	English Language	2	–

Second	221CsAl	Arabic Language	2	–
Second	222CsBc	Crimes of the Baath Party	1	–
Third	322CsAi	Artificial Intelligence	2	2
Third	326CsC	Compiler	2	2
Third	321CsCg	Computer Graphics	2	2
Third	340CsVb	Visual Basic	2	2
Third	327CsCa	Computer Architecture	2	–
Third	325CsSw	Software Engineering	2	–
Third	323CsAp	Counseling and Mental Health	2	–
Third	324CsCt	Curriculum and Teaching Methods	2	–
Third	328CsDd	Database Design	2	2
Fourth	433CsOs	Operating System	2	2
Fourth	432CsCn	Computer Networks and Communications	2	2
Fourth	441CsWd	Website Design	2	2
Fourth	442CsIo	Internet of Things	2	2
Fourth	431CsSe	Data Security	2	2
Fourth	429CsP	Project	2	–
Fourth	428CsMe	Measurement and Evaluation	2	–
Fourth	430CsPe	Practical Education	1	1

8. Expected learning outcomes of the program

Knowledge	
A1: Technical knowledge in computer science fields A2: Understanding computer systems, understanding the practical applications of information technology A3: Teamwork and communication skills	A1: Providing students with deep knowledge in various computer science fields such as programming, databases, information systems, web development, software design, and development. A2: Equipping students with a deep understanding of computer systems and software engineering, including designing and developing large and complex systems. Students should also gain an understanding of the practical applications of information technology in various fields such as education, health, business, and entertainment. A3: Developing students' teamwork and collaboration skills with software development teams, as well as effective communication skills in an

A4: Equipping students with teaching skills, educational guidance, and classroom management	information technology work environment. A4: Providing students with necessary information about teaching strategies, methods, and techniques, and equipping them with teaching skills such as planning, implementation, assessment, and time management.
Skills	
B1: Programming skills and software design B2: Web and mobile applications development B3: Database management B4: Proficiency in modern teaching methods	B1: This includes students' ability to write and understand code in various programming languages such as Python, Java, C++, and others. It also involves the ability to solve problems using algorithms. This skill relates to students' ability to analyze user needs and design and develop software that effectively meets those needs. B2: This skill includes students' ability to develop applications, websites, and mobile applications that interact effectively with users. B3: Students' ability to design and manage databases using various database management systems such as MySQL, Oracle, MongoDB. B4: Modern teaching methods skills include a variety of strategies and techniques aimed at enhancing the learning experience and promoting student engagement.
J1: Adherence to professional ethics J2: Commitment to electronic values J3: Integrity and ethics J4: Knowledge and learning	J1: Students are encouraged to understand and apply professional ethical values in the field of information technology and computer science, such as honesty, respect, responsibility, and protection of privacy and security. J2: Students should refrain from spying on others and maintain the confidentiality of information, and should not harm others by spreading harmful viruses. J3: The program takes care to promote ethical values and integrity in the field of computer science, teaching students the importance of ethical principles and proper conduct in the field of technology. J4: The program enhances the value of knowledge and learning by providing an educational environment that encourages the acquisition of knowledge and the development of skills in various areas of computer science.

9. Teaching and Learning Strategies

The strategies and teaching methods adopted in implementing the program are as follows:

1- Lecture method supported by technology in learning.

2- Active learning, including problem-solving-based learning.

3- Project-based learning.

4- Cooperative learning.

5- Demonstration experiments method.

10. Evaluation methods

1- Monthly exams
2- Daily exams
3- Group projects
4- Reports
5- Observation card

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Asst.Prof.Dr.Esraa Saleh Hasoon	Computer Science	Network Security			√	
Asst.Prof.Dr.Baraa Ismail	Computer Engineering	Science and Computer Engineering			√	
Asst.Prof.Dr.Riyahd Rehaif	Computer Science	Cyber Security			√	
Asst.Prof.Dr.Rawaa Ismail	Computer Science	Information System			√	
Asst.Prof.Dr.Jamal Khudair	Computer Science	Information and Communication Technology			√	
Asst.Prof.Iman Khadum	Computer Science	Information Technology			√	
Dr.Ali fhadel	Computer Science	AI			√	

Lecturer. Zaman Abood	Computer Science	Computer Science			√	
Lecturer. Manar Bashar Murtatha	Computer Science	Computer Science			√	
Lecturer. Jafar Sadeq	Computer Science	Computer Science			√	
Assist.Lecturer. Abdulhadi Nadhum	Computer Science	Computer Science			√	
Assist.Lecturer.Baraa Muhammed	Computer Science	Computer Science			√	
Asst.Lecturer.Abbas Hadi	General Teaching Methods and Curricula	General Teaching Methods and Curricula			√	
Asst.Lecturer.Zahraa Albatool Majeed	Mathematics	Mathematics			√	
Asst.Lecturer.Muhammed Ali Wanas	Mathematics	Mathematics			√	
Asst.Lecturer.Suhad Salman	History	Modern History			√	
Asst.Lecturer.Alaa Abdulameer	History	Islamic Curriculum and Resources			√	

Professional Development

Mentoring new faculty members

1- Development and training programs
2- Guidance and mentoring programs
3- Participation in professional learning communities

4- Academic advising

Professional development of faculty members

1- Needs analysis
2- Implementation of training programs and workshops
3- Application of modern teaching strategies
4- Monitoring and evaluation of performance
5- Feedback assessment and support

12. Acceptance Criterion

1- Admission is centralized through the Ministry of Higher Education and Scientific Research. 2- Parallel admission channel. 3- Admission channel for top teachers.

13. The most important sources of information about the program

- Sectoral committee
- Ministerial committees for curriculum updating
- University and college website
- Ministry of Higher Education and Scientific Research website

14. Program Development Plan

Implementing programmatic accreditation standards for educational colleges.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
First	103CsSp	Structured Programming	Core	√	√	√	√	√	√	√	√	√	√	√	√
	102CsLd	Logic Design	Core	√	√	√	√								
	109CsDs	Discrete Structures	Core	√	√	√	√					√	√	√	√
	104CsCo	Computer Architecture and Organization	Core	√	√	√	√	√	√	√	√	√	√	√	√
	101CsMa	Mathematics	Core					√	√	√	√				
	108CsEs	Educational Psychology	Optional	√	√	√	√								

	110CsHr	Democracy and Human Rights	Optional	√	√	√	√								
	107CsAl	Arabic Language	Optional	√	√	√	√								
	105CsBb	Foundations of Education	Optional	√	√	√	√								
	106CsEl	English Language	Optional	√	√	√	√								
Second	220CsMm	Numerical Analysis	Core	√	√	√	√	√	√	√	√	√	√	√	√
	212CsDa	Data Structures and Algorithms	Core	√	√	√	√	√	√	√	√	√	√	√	√
	219CsOo	Object– Oriented Programming	Core	√	√	√	√	√	√	√	√	√	√	√	√

	218CsSa	Systems Analysis and Database	Core	√	√	√	√	√	√	√	√	√	√	√	√
	211CsCt	Computational Theory	Core	√	√	√	√	√	√	√	√	√	√	√	√
	213CsMp	Microprocessors	Core	√	√	√	√	√	√	√	√	√	√	√	√
	216CsEm	Educational Management and Secondary Education	Optional					√	√	√	√				
	214CsRm	Curriculum and Textbook	Optional					√	√	√	√				
	217CsDp	Developmental Psychology	Optional					√	√	√	√				
	215CsEl	English Language	Optional					√	√	√	√				

	221CsAl	Arabic Language	Optional					√	√	√	√					
	222CsBc	Crimes of the Baath Party	Optional					√	√	√	√					
Third	322CsAi	Artificial Intelligence	Core	√	√	√	√	√	√	√	√	√	√	√	√	
	326CsC	Compiler	Core	√	√	√	√	√	√	√	√	√	√	√	√	
	321CsCg	Computer Graphics	Core	√	√	√	√	√	√	√	√	√	√	√	√	
	340CsVb	Visual Basic	Core	√	√	√	√	√	√	√	√	√	√	√	√	
	327CsCa	Computer Architecture	Core	√	√	√	√	√	√	√	√	√	√	√	√	
	325CsSw	Software Engineering	Core	√	√	√	√	√	√	√	√	√	√	√	√	
	323CsAp	Counseling and Mental Health	Optional	√	√	√	√									

	324CsCt	Curriculum and Teaching Methods	Optional	√	√	√	√									
	328CsDd	Database Design	Core	√	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	433CsOs	Operating System	Core	√	√	√	√	√	√	√	√	√	√	√	√	√
	432CsCn	Computer Networks and Communications	Core	√	√	√	√	√	√	√	√	√	√	√	√	√
	441CsWd	Website Design	Optional									√	√	√	√	√
	442Cslo	Internet of Things	Optional									√	√	√	√	√
	431CsSe	Data Security	Core	√	√	√	√	√	√	√	√	√	√	√	√	√
	429CsP	Project	Core	√	√	√	√	√	√	√	√	√	√	√	√	√

	428CsMe	Measurement and Evaluation	Optional	√	√	√	√								
	430CsPe	Practical Education	Core	√	√	√	√	√	√	√	√	√	√	√	√

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:
structured programming
2. Course Code:
103CsSp
3. Semester / Year:
2023-2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours and 60 practical hours
7. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name: Dr :Riyadh Rahef Nuiaa Email: riyadh@uowasit.edu.iq Responsible for the practical course Name: BSc. Nooralhuda Lateef Email: nooralhudalateef@gmail.com
8. Course Objectives

Course Objectives	1. Master the foundational concepts of structured programming paradigms using C++ language syntax. 2. Develop proficiency in writing clear, modular, and efficient C++ code following best practices. 3. Explore control structures, functions, arrays, and pointers to manipulate data and control program flow. 4. Understand the principles of object-oriented programming (OOP) and apply them using classes and inheritance. 5. Learn debugging techniques, error handling, and memory management to create robust and reliable C++ programs.

9. Teaching and Learning Strategies

Strategy	1- Using practical examples 2- Project-based learning 3- Discussions and effective exchange of ideas 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled by practical applications 7- Encouraging self-exploration and continuous learning

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1-8	4	Introduction, procedural, programming principles, Algorithms and flowcharts, properties and design, C++ Language Basics (Character set, Identifiers, keywords , Variables, Constants, C++ operators (Arithmetic Operators, Assignment operators, relational operator, comparison and logical operators, bitwise logical operators), type conversion, Statements, getting started with C++, order evaluation.	structured programming	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
9-16	4	Selection Statements (Selection Statements, The Single If Statement Structure, The Single If Statement Structure (Blocks), The If/else Statement Structure, Nested If and If/else Statements, else if statement, Switch statement,	structured programming	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

		nested switch, conditional statement			
17-22	4	loop iteration Statements (while Repetition Structure, Do/While Statement, For Statement, More about For Statement, Nested for Loops Break and Continue Control Statements, goto statements).	structured programming	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
23-27	4	Functions (introduction, defining a function, retu statement, types c functions. actual a formal arguments local and glo variables, recursiv functions) Arra (Array of One Dimension (Declaration Arrays, Initializing Ar Elements, Accessi Array Elemer Read / Write Process Array Elements)	structured programming	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

28-30	4	Array of Two Dimension (Declaration of 2D-Arrays, Initializing 2D-Array Elements, Read / Write / Process Array Elements)) String (Read / Write / Process Array Elements, Member Function of String), Structure, structure within structure Array of structures, functions and structures.	structured programming	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning.	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

11. Course Evaluation	
- The annual course of 40 is divided into 15 marks for the practical subject and 25 marks for the theoretical subject, including 10 marks for the totals of projects and the daily. - Final out of 60	
12. Learning and Teaching Resources	
Required textbooks (curricular books any)	Mastering C++ Programming (Palgrave Master Series (Computing), 10)
Main references (sources)	Mastering C & C++ Programming: From Fundamentals to Advanced
Recommended books and references (scientific journals, reports...)	C++ for Beginners: Mastering C++ Programming Essentia
Electronic References, Websites	

Course Description Form

1. Course Name:	
Logic circuits	
2. Course Code:	
103CsSp	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
3/3/2024	
5. Available Attendance Forms:	
Actual mandatory attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60 theoretical hours 60 practical hours	
7. Course administrator's name (mention all, if more than one name)	
Responsible for the theoretical and practical Name: teacher Hussein najm abd ali Email: hnajim@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	1. To acquire the basic knowledge of digital logic levels and application of knowledge to understand digital electronics circuits. 2. To prepare students to perform the analysis and design of various digital electronic circuits. 3. Have a thorough understanding of the fundamental concepts and techniques used in digital electronics. 4 To understand and examine the structure of various number systems and its application in digital design.5. The ability to understand, analyze and design various combinational and sequential circuits. 6. Ability to identify basic requirements for a design application and propose a cost effective solution7. The ability to identify and prevent various hazards and timing problems in a digital design. 8. To develop skill to build, and troubleshoot digital circuits.
9. Teaching and Learning Strategies	
Strategy	1- Using practical examples 2- Project-based learning 3- Discussions and effective exchange of ideas 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled by practical applications 7- Encouraging self-exploration and continuous learning
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1-8	4	Number System, Binary Codes and Boolean Algebra : Conversion of bases, Representation of negative numbers, 1's complement, 2's complement, arithmetic using 2's complement Hexadecimal code, weighted codes - BCD, Excess-3 code, Gray Code. Logic gates and Boolean Algebra	Logic circuits	Theoretical lectures , application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
9-16	4	Boolean function representation and minimization techniques: Standard and canonical representation and minimization of Boolean expressions using Karnaugh map	Logic circuits	Theoretical lectures, application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
17-22	4	Combinational Logic Circuits : Half Adder, Full Adder, Half Subtractor, Full Subtractor, Full adder using half adder, BDC Adder. Carry Look ahead, Multipliers. Multiplexer/de-multiplexers,	Logic circuits	Theoretical lectures, application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics)

		Encoders and Decoders			3-Using the group system to complete mini projects 4-Daily questions and discussions
23-27	4	Sequential Logic Circuits: Latches, Edg Triggered Flip Flops: SR, D, JK, Master slav JK,. Excitation tables, conversion of Flip Flops. State Diagram Counters: Synchrono and Asynchronous counters, Up/Down Counters, Design of Synchronous counte Cascaded Counters, Counter Decoding, Counter applications 8 7 Shift registers: Sh register functions, Serial in/serial out sl registers, serial in parallel out/shift registers, Parallel In/ Parallel out shift registers, bidirection Shift registers, Shift register counters, Sh register Applications	Logic circuits Normal logarithm Exponential function there graph Inverse trigonometric function Hyperbolic function polar coordinates	Theoretical lectures, application in the laboratory, the use of the group system to solve problems, and blended learning Theoretical lectures, application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
28-30	4				1-Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

11. Course Evaluation	
- The 40th annual session is divided into - 30 marks for the semester exams (at last two test in each semester0 -5 marks for participation, activities and reports. -5 marks for total daily attendance - Final out of 40	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	M. Morris Mano. "Digital Logic and Computer Design",
Main references (sources)	. M . Morris Mano, "Digital Design", Pearson Education Asia,.
Recommended books and references (scientific journals, reports...)	. T h o m a s L F l o y d " D i g i t a l F u n m e n t a l s "
Electronic References, Websites	https://www.geeksforgeeks.org/logic-gates/

Course Description Form

1. Course Name:

Discrete Structures

2. Course Code:

109CsDs

3. Semester / Year:

2023-2024

4. Description Preparation Date:

3/3/2024

5. Available Attendance Forms:

Actual mandatory attendance

6. Number of Credit Hours (Total) / Number of Units (Total)

60 theoretical hours

7. Course administrator's name (mention all, if more than one name)

Assist.porf.Dr Ahmed Shihab Hamad
Email: aalattabi@uowasit.edu.iq

8. Course Objectives

Course Objectives	1- Introducing the student to the basics of the structure discrete 2- The teachers covered by the structure discrete and the services it provides 3- Practical application of computer problem.

9. Teaching and Learning Strategies

Strategy	1- Using practical examples 2- Discussions and effective exchange of ideas 3- Providing theoretical lessons paralleled by practical applications

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	2	Fundamentals of Mathematics :Induction Introduction, Definitions	**Mathematical Induction**	Theoretical lectures and question	Conducting theoretical and practical tests
		Introduction ,Sim Logic Statement ,Variables use i proposition statement Compound logi logic Equivalence, Tautology, Contradiction ,logical	**Mathematical Logic**	Theoretical lectures and question	Conducting theoretical and practical tests

		Implication, Algel of Proposition, conditional Statements, Variations , Quantifiers ,Logi Reasoning			
9-16	2	Introduction ,Methods of expressing sets Principle Concepts of set Venn_ Diagrams, Sets 8_ordered Pairs products Sets ,Boolean Algebra.	**Sets Theory**	Theoretical lectures and question	Conducting theoretical and practical tests
17-22	2	Introductions , Binary relation Graph of the Relations ,Photographer Representatio of the relation, T Domain and the range Of relation , Identit relation, Invers relation , Composition relation , Type of Relatio Equivalence Relations	**Relations**	Theoretical lectures and question	Conducting theoretical and practical tests
23-27	2	Introduction ,Principle Concepts and Definition, Models of Functi ,Composition Functions, Algeb of Functions, Discussion Functions throu The planned equ ,Draw	**Functions** **Vectors**	Theoretical lectures and question s Theoretical lectures and question	Conducting theoretical and practical tests) Conducting theoretical and practical tests

28 -30	2	Graph Function Introduction, Vectors , Matrices ,Models of Square Matrices Algebra the Matrices ,Determinants, Fi Inverse square None Singular Matrix , Solving System of Linear equations ,Using t Non homogeneou ,Matrix inverse, Grammar Rules . Introduction Principle Concept Types of Graphs ,Definitions Examples of Grap , Graphs and Relation , Graphs and Matrices Introduction Principle Concept Languages, Crammers ,Type Of Crammer ,Machines,Finite States Machine ,Finite Automata Introduction, Principle Concept Mathematical Systems, Groups, Cossets, Normal Subgroups, Quotient group, Homomorphism	**Graph Theory** **Formal Langua And Machines** **The Mathemat System and the Groups**	Theoretical lectures and question Theoretical lectures and question Theoretical lectures and question	Conducting theoretical and practical tests Conducting theoretical and practical tests Conducting theoretical and practical tests

		And Isomorphism Rings , Fields			

11. Course Evaluation	
- The annual course of 40 is divided into 15 marks for the practical subject and 25 marks for the theoretical subject, including 10 marks for the totals of projects and the daily. - Final out of 60	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	"The Internet of things Connecting "
Main references (sources)	The Internet of things: Key Application and Protocols
Recommended books and references (scientific journals, reports...)	Foundation Elements an IoT Solution
Electronic References, Websites	https://www.techtarget.com

Course Description Form

1. Course Name:
Computer Organization
2. Course Code:
104CsCo
3. Semester / Year:
2023/2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours **60 hours of practical lab**
7. Course administrator's name (mention all, if more than one name)
Name: Zain Alabideen Ali Raheem **Email: zainalabidin123.zaa@gmail.com**

8. Course Objectives	
Course Objectives	This academic curriculum is a basic introduction to knowledge of the computer system. The student will learn the main elements of a computer system. Such as introduction to computer science, basic concepts in computer science, definition of computer, classification of computers, development or generations, parts of the computer system including hardware and software. The curriculum aims to:- 1. The goal required of the student to successfully pass the course requirements is the student's awareness and understanding of the computer system. 2. Distinguish between hardware and software.

9. Teaching and Learning Strategies	
Strategy	1. Giving lectures by giving logical explanations of the topic being taught. 2. Class participation through preparing reports related to the subject and discussing them.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1-8	4		hardware	theoretical	Discussion/questions and answers
			Representing data in a computer	theoretical	Discussion/questions and answers
			Input and output units	theoretica	Discussion/questions and answers
			Software	theoretica	Discussion/questions and answers
			Networks	theoretica	Discussion/questions and answers
			Information technology in our daily life	theoretica	Discussion/questions and answers
			Security and protection	theoretica	Discussion/questions and answers
			Exam		Questions
9-16	4		Legal issues	theoretica	Discussion/questions and answers
			Windows	theoretica	Discussion/questions and answers
			start menu	theoretica	Discussion/questions and answers
			control Panel	theoretica	Discussion/questions and answers
			Install and uninstall programs	theoretica	Discussion/questions and answers
			Create folders	theoretica	Discussion/questions and answers
			anti-virus	theoretica	Discussion/questions and answers
			Exam	theoretica	Questions
			Microsoft Word 2010	theoretica	Discussion/questions and answers
17-22	4		Insert text into the document	theoretica	Discussion/questions and answers

			Text formatting	theoretical	Discussion/questions and answers
			Tables	theoretical	Discussion/questions and answers
			Header and footer	theoretical	Discussion/questions and answers
			page numbering	theoretical	Discussion/questions and answers
			Insert an image	theoretical	Discussion/questions and answers
23-26	4		Design tab	theoretical	Discussion/questions and answers
			References tab	theoretical	Discussion/questions and answers
			Correspondence tab	theoretical	Discussion/questions and answers
			Preview and print the document	theoretical	Discussion/questions and answers
			Spelling and grammatical errors	theoretical	Discussion/questions and answers
27-30	4		Prepare a report	theoretical	Discussion/questions and answers
			Exam	theoretical	Questions

1. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports ....etc
*Semester/30%
*Daily preparation, activities and attendance/10%
*Final exam/60%

2. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Computer Organization
Main references (sources)	Basic computer and software skills
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Educational Psychology
2. Course Code:
108CsES
3. Semester / Year:
2023-2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 Hours / Number of Units (4)
7. Course administrator's name (mention all, if more than one name)
Lecturer : Ali Anad zamel Email: aanad@uowasit.edu.iq
8. Course Objectives

Course Objectives	* Definition of educational psychology as a field of psychology that is concerned with the study of human behavior in educational situations, especially at school. * Introducing the importance of educational psychology and its impact on the educational process by discovering methods, methods and procedures by which it is possible to achieve the educational objectives set by the philosophy of Education. * Definition of the importance of educational psychology for the teacher by reaching him to a more understanding of the learning process, the nature and behavior of the learner and the educational attitude, taking into account the interaction between the teacher and the learner, the learningattitude and a range of other factors outside the school environment, in order to increase the effectiveness of the educational process and raise its efficiency.
	A-Cognitive Objectives A1-the student will be able to know the basics andprinciples of classroom interaction . A2-the student will be able to know the problems ofteaching and learning.

	A3-the student will be able to understand the behavior and the stages of genetic and environmental development that it is affected by. A4-the student will be able to know the factors affecting the effectiveness of the educational process. A5-the student will be able to understand educational phenomena and interpret them by scientific methods. A6-the student will be able to know the theories that can be employed in the educational process.
	B- Psychomotor Objectives B1-the student will be able to solve the problems facing himin the areas of his professional life (teaching and classroom learning), public and private. B2-the student will be able to deal with personal behavioral disorders and other individuals. B3-the student will be able to employ the concept of motivation in the field of the educational process. B4-the student will be able to make decisions in all classroom and life situations.
	C-Affective Objectives C1-the student's appreciation of the greatness of the creatorin his creation of the human mind. C2-appreciation of the student's lack of knowledge and the efforts of scientists. C3-the student's appreciation of the role of the educational institution in community service. C4-the student's appreciation of the teacher's efforts and his role in raising the efficiency of the educational process.

9. Teaching and Learning Strategies

Strategy	* Cooperative learning strategy * Problem-solving strategy * Brainstorming strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	2	The student knows about the historical development of psychology, the student knows about	The historical development of psychology, the concept of Psychology, its importance,	Presentation, Video lecture, Discussion	By Electronic activity
		the concept of psychology	objective, branches		
		The student knows about the schools of psychology	Introspective school, functional school, behavioral school, Castilian school	Presentation, Video lecture, Discussion	The Daily Written Exam

		The student knows about the concept of educational psychology and its importance	The concept of Educational Psychology and its importance for the educational process, the importance of Educational Psychology for the teacher	Presentation, Video lecture, Brainstorming	By Electronic activity
		The student knows about the concept of educational objectives	The concept of educational objectives, the sources of their derivation, their levels, specifications, the formulation of behavioral objectives, the classification of educational objectives	Presentation, Video lecture, Discussion	By Oral assessment
		The student knows about models in educational psychology	Factors affecting the effectiveness of the educational process according to the model Klausmeier and Goodwin	Presentation, Video lecture, Discussion	By oral assessment
		The student knows about the research methods in psychology and educational psychology	The concept of the scientific research method, the most important methodsand approaches used in general psychology and educational psychology	Presentation, Video lecture, Discussion and Cooperative Learning	The Daily Written Exam
		The student knows about the concept of behavior	The concept of behavior, factors influencing behavior	Presentation, Video lecture, Discussion and Problem solving	By Electronic activity

9-16	2	The student knows about the concept of learning, the student knows about the concept of motivation, the student knows about the classification of motives, the student knows about the principle of maintaining balance	The concept of learning, factors influencing learning, the concept of motivation, the classification of motives, the principle of maintaining balance	Presentation, Video lecture, Discussion	The Daily Written Exam
		The student knows about the effect of motivation in learning, the student knowsabout the educational functions of motivation	Motivation in learning, the educational functions of motivation	Presentation, Video lecture, Discussion and Brainstorming	By oral assessment
		The student knows about the strategies of arousing students ' motivation towards learning, the student knowsabout the hierarchical organization of motives	Strategies of arousing students ' motivation towards learning, hierarchical organization of motives (Maslow)	Presentation, Video lecture, Discussion	The Daily Written Exam

		the student recognize the characteristics of attention, the student recognize the types of attentio n	The concept of attention, properties of attention, types of attention	Presentation, Video lecture, Discussion	By oral assessm ent
		The student understand the	Factors influencing	Presentation, Video lecture, Discussion	By Electronic activity
17-22	**2**	factors influencing attention, thestudent recognize distractions	attention-grabbing, inattention		
		the student understand the factors affecting the sensation and perception	Perception and sensation, factors affecting sensation and perception	Presentation, Video lecture, Discussion	By oral assess ment
			Monthly exam		By Written exam
		the student recognize the types of memory	Memory, types of memory	Video lecture, Presentation, Discussion and Cooperative Learning	According to thestudent's preparation of an individual or joint report
		The student identify the factors that help to remember, the student identify the theories that explained the memory	Factors helping to remember, theories that have explained memory	Presentation, Video lecture, Discussion and Problem Solving	By Electro nic activity

23-30	**2**	The student knows about forgetting , the student knows about the theories that explain forgetting , the student understand the factors that affect the processes of remembering and forgetting,	Forgetting, theories that explained forgetting, factors influencing the processes of remembering and forgetting	Presentation, Video lecture, Discussion	The Daily Written Exam
		The student knows about thinking, the student understand the purpose of thinking, the student knows	The concept of thinking, the purposes of thinking, the types of thinking	Presentation, Video lecture, Discussion	By Electronic activity

Course Description Form

1. Course Name:	
English language	
2. Course Code:	
106ScEl	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
3/3/2024	
5. Available Attendance Forms:	
Actual mandatory attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60 theoretical hours	
7. Course administrator's name (mention all, if more than one name)	
Name: Assistant Lecturer Nagham Fadhil Hussein Email: nahussain@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	To enrich the students' knowledge about English language 2- Improve students' ability in listening, speaking, reading and writing 3-Mak the students feel with the English language in their study
9. Teaching and Learning Strategies	
Strategy	Discussion and ask questions, giving the chance to students to participate by speaking, reading and translation.
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method
1-8	2	Acquire social manner, like introduction and greeting Know his environment as some cities, the phone numbers Know some information's about his identity	Unit one: Hello Unit 2: your world Unit3: All about you	Theoretical lectures ,
9-16	2	Know how to use the possessives Review Know some nationalities and countries, the present simple Know how to arrange the times and preference Review	Unit4: family and friends Exercises and solutions Unit 5: The way live Unit 6: Every day Exercises and solutions	Theoretical lectures
17-22	2	How to use pronouns and the questions word Know house parts and furniture Learn the past tense	Unit 7: My favorites Unit 8: Where I live Unit 9: Times past	Theoretical lectures
23-27	2	Know the importance of doing homework and some sports Review Use the model verb can The present continues tense How to use means of trans portion	Unit 10: We had a great time Exercises and solutions Unit 11: I can do that	Theoretical lecture

28-30	2	Express with full sentences about good manner Review	Unit:12 Please and thank you Unit 13: Here and now Unit 14: It's times to go Exercise and solution	Theoretical lecture

Course Evaluation	
- The 40th annual session is divided into - 30 marks for the semester exams (at last two test in each semester0 -5 marks for participation, activities and homework	
Learning and Teaching Resources	
Required textbooks (curricular books, if any)	New Headway Pulse for Beginners, John and Liz Soars, Oxford
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Fundamentals of Education	
2. Course Code:	
105CsBB	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
3/3/ 2024	
5. Available Attendance Forms:	
Actual mandatory attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60 Hours /2 hours of theory per week/4 units	
7. Course administrator's name (mention all, if more than one name)	
Lecturer : Nisreen naseer khalaf Email : nisreenkhalaf@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	• The student understands the meaning of education, its goalsand principles, and that education is the primary means of achieving the state's philosophy • He also learns about the principles of primitive education. • The student differentiates between education and teachingand understands the relationship between education, technology and the environment. • Make the student feel the value of ancient civilizations thatplayed a prominent role in the progress of societies and highlight the achievements of some scholars in this field. • Recognizes the importance of the family in society, and its role in building individuals with integrated personalities inall aspects. • The student understands that education is the basis for theeconomic process and development. • The student learns about modern education and secondaryeducation in Iraq.
Cognitive objectives	A1- That the student gets to know the meaning of education, its concept,goals, necessities, and the educational theories that address it. A2- That the student becomes familiar with the historical basis ofeducation in ancient civilizations. A3- That the student recognizes the stages of development of theconcept of education over time. A4- The student should know the concept of education in ancient Western societies, European education before the Renaissance.

	A5- That the student learns about the role of civilization anddevelopment in education.

	A6- That the student learns about the development of Arab-Islamiceducation and contemporary education. A7- That the student becomes familiar with the social, economic, scientific and national basis by addressing topics related to family,culture, environment, moral education and linking education to theeconomic return of education, planning and development. A8- That the student becomes familiar with the concept of science andthe steps of scientific research. A9- That the student learns about the role of school and home indeveloping the national conscience.
psychomotor Objectives	B1 - The student must have the ability to work within the educationaland professional work team (educational work skill). B2 - That the student uses positive thinking and employs the knowledgehe has received. B3 - The student must have the ability to communicate with partiesoutside the university and train with them. B4- That the student be able to learn and master the teaching profession. B5- The student must be able to possess the skill of dialogue anddiscussion. B6- The student must have the ability to manage and lead the class.
affective objectives	C1- The student should appreciate the importance of education inbuilding the individual's personality. C2- That the student realizes the importance of the family. C3- That the student realizes the importance of religious education,especially Islamic education. C4- That the student realizes the importance of the relationship betweenfamily members and the role of education in that. C5- The student should appreciate the importance of society. C6- The student should value the relationship between education,science and technology.
9. Teaching and Learning Strategies	

Strategy	• Discussion strategy • Teamwork strategy • Brainstorming strategy • Reciprocal teaching strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	2	For the student to know the meaning of education, its duties, and thenature of the educationalprocess	Introduction to education, the meaning of education,elements of education	Lecture And interrogation	Oral assessment, exams and daily assignments in person or (Via GoogleClassroom,)
		For the student to know the meaning of education, its duties, and thenature of the educational process	Definition of education, duties ofeducation	Lecture And interrogation	Oral assessment, exams and daily assignments in person or (Via GoogleClassroom,)
		For the student to become familiar with the functions and objectivesof education	The most important educational goals, types of education	Lecture And interrogation	Oral assessment, exams and daily assignments in person or (Via Google Classroom ,)
		For the student to distinguish thedifference between education andteaching	The difference between educationand teaching.	Lecture And interrogation	Oral assessment, exams and daily assignments in person or (Via Google Classroom ,)
		For the student to become familiar with the historical basis of education and education in ancient Western societies.	The historical basis of education, primitive education (its goals, types, content, and characteristics)	lecture Discus sion And interrogation	Oral assessment, exams and daily assignments in person or (Via GoogleClassroom,)
		For the student to become familiar withthe historical basis of education, education in ancient Western societies and civilizations,and developmentin education.	Education in some ancient civilizations, education in the Mesopotamian civilization, ancient schools and their cultural message, education in the Nile Valley civilization	lecture Discus sion And interrogation	Oral assessment, exams and daily assignments in personor (Via GoogleClassroom,)
		the historicalbasis of education, European education			(Via GoogleClassroom,)
		For the student to become familiar with the historical basis of education, European education And to distinguish between themand note the development in	Greek education (Spartan education, Athenian education),	lectu re	Oral assessment, exams and daily assignments in personor

		education.		Disc ussio n And interrogation	(Via Google Classroom,)

9-16	**2**	For the student to become familiar with learning and teaching in theArab-Islamic education stage	The philosophy of Arab education, the stages of Islamic education (the stage ofIslamic preaching, the stage of prosperity and progress, the stage of decline and dissolution)	lecture Discussion	Oral assessment, exams and daily assignments in personor (Via Google Classroom,)
		For the student to become familiar with learning and teaching in theArab-Islamic education stage	Educationa l institutions and institutes among Muslims, women's education in Islam, teachers in Islam, conditions that must be met by a teacher, general features of Arabic education.	lecture Discussion	Oral assessment, exams and daily assignments in personor (Via Google Classroom,)
		For the student to become familiar withthe figures of Islamic educational thought and their educational opinions, andto appreciate their role in the developmentof education	The most famous figures of Islamic educational thought (Ibn Sina, Ibn Khaldun, Al-Ghazali,Jabir Ibn Hayyan)	lecture Discussion	Oral assessment, exams and daily assignments in personor (Via Google Classro om,)

		The student gets to knowthe social basis of education	The educational role of the family, the roleof the family in the educational process, the impact of the comprehensive cultural system of thefamily on raising the child, the role of the family in educational problems	lecture Discussio n	Oral assessment, exams and daily assignments in personor (Via Google Classroom,)
		The student gets to know culture, its classification s and characteristic s,and its relationship toeducation	Definition of culture, classifications of culture, characteristicsof culture, the relationship between culture and education,the importance of studying culture for the teacher	lecture Discussion and dialogue	oral evaluation, Daily exams, monthlyexams, research work, daily assignments, In person or (via Google Classroom)
		For the student to become familiar with environment aleducation, andto employ environment aleducation in the curricula	Environmental education goals andobjectives, environmental education and curricula, Islamic trends in environmental protection,	lecture Discussion and dialogue	oral evaluation, Daily exams, monthlyexams, research work, daily assignments, In person or (via Google Classroom)
		To appreciate and maximize the Creator's ability and employ it in protecting the environmen t	Islamic trends in environmental protection	lecture Discussion and dialogue	oral evaluation, Daily exams, monthlyexams, research work, daily assignments, In person or (via Google Classroom)

		For the student to become familiar with moral education and understand its importance. To acquire teaching skill	The concept of moraleducation, the importance of moralsin Islam, ethics in the philosophy of Islamiceducation, discussionof a group of reports related to the topic.	Lecture, interrogation andDiscussion	oral evaluation, Doing research, dailyduties, In person or (via Google Classroom)
17	2	For the student to become familiar with moral education and understand its importance. To acquire teaching skill	Islamic methods in developing moral values, discussing a group of reports related to the topic	Lecture, interrogation andDiscussion	oral evaluation, Doing research, dailyduties, In person or (via Google Classroom)
19-22	**2**	basis of education	Quantitative aspect, qualitative aspect, time aspect, quantitative waste, qualitative waste		Doing research, dailyduties, In person or (via Google Classroom)
		To learn aboutthe economic basis of education and its relationshipto development	The relationship of education to development	Lecture, interrogation andDiscussion	oral evaluation, Doing research, dailyduties, In person or (via Google Classroom)
		To know the scientific basis of education	Scientific and technological progress, science and its characteristics, the positive aspect of scientific thinking, the theoretical aspect of scientific thinking	Lecture, interrogation and Discussion	oral evaluation, Doing research, dailyduties, In person or (via Google Classroom)
		To learn about the scientific basis of education and its relationshipto the technological revolution.	Stages of the scientific research method, the relationship of education to the technological revolution	Lecture, interrogation and Discussion	oral evaluation, Doing research, dailyduties, In person or (via Google Classroom)

		To become familiar with the national and national foundations of education.	Education, nationalunity and patriotism	Lecture, interrogation and Discussion	oral evaluation, Daily exams, monthlyexams, daily assignments, Do research In person or (via Google Classroom)
23-27	**2**	To become familiar with the national and national foundations of education.	The philosophy of education and its goals in Iraq	Lecture, interrogation and Discussion	oral evaluation, Daily exams, monthly exams, daily assignments, Do research In person or (via Google Classroom)
		That the student can learn and master the teaching profession. The student must be able to possess the skill of dialogue and discussion, theskill of class management and leadership.	The student submits a report on one of the topics of the foundations of education, and the student plays the role of the teacher, presenting it to the students, which is finally discussed and evaluated.	Presentation and discussion	Making a report, oralevaluation
		To become acquainted with the majorfigures of Western educational thought.	Maccarino, JohnDewey	Lecture, interrogation and Discussion	oral evaluation, Daily exams, monthly exams, daily assignments, Do research In person or (via Google Classroom)
		That the student can learn and master the teaching profession. The student must be able to	The student submits a report on one of the topics of the foundations of education, and the student plays the roleof the teacher, presenting it	Presentation and discussion	Making a report, oral

		possess the skill of dialogue and discussion, the skill of class management and leadership.	to the students, which is finally discussed and evaluated.		evaluation
28-30	**2**	That the student can learn and master the teaching profession. The student must be able to possess the skill of dialogue and discussion, the skill of class management	The student submits a report on one of the topics of the foundations of education, and the student plays the role of the teacher, presenting it to the students, which is finally discussed and evaluated.	Presentation and discussion	Making a report, oral evaluation
		To learn about the characteristicsof secondary education in Iraq.	Its concept, organization, student,teacher	Lecture, interrogation and Discussion	oral evaluation, Daily exams, monthly exams, daily assignments, Do research In person or (via Google Classroom)
		To learn about the characteristicsof secondary education in Iraq	Registration, educational activity, social organization, educational administration	Lecture, interrogation and Discussion	oral evaluation, Daily exams, monthlyexams

11. Course Evaluation	
Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.	
12. Learning and Teaching Resources	
Required textbooks (methodology)	Vocabulary prescribed by the university within the sector

Main references (sources)	The book “Foundations and Principles of Education”(written by Faisal Abd Munshid) Basics in Education book (written by Khalif YoussefTarawneh)
Recommended supporting books and references (scientific journals, reports…)	Principles of Education book (Ahmed Haqqi Al-Hilli,Nouri Abbas Abdullah)
Electronic references, Internet sites	https://www.noor-book.com/tag/%D8%A3%D8%B3%D8%B3-D8%A7%D9%84%D8%AA%D8%B1%D8%A8%D9%8A%D8%A9 http://mktba.net/library.php?id=13197

13. Course development plan
• Developing the academic content by deleting, adding, or replacing with the aim of enriching thesubject content with modern information. The development also includes questions in terms of diversity in evaluation methods. • Adding a topic on the most important modern educational theories, and how to apply them in theteaching process

Description course form

1. Course Name:	
Human Rights and Democracy/	
2. Course Code:	
110CsHR	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
3-3-2024	
5. Available Attendance Forms:	
Actual mandatory attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30 hours / 1 units	
7. Course administrator's name (mention all, if more than one name)	
Lecture: suhad dawood salman Email : suhaddawood2@gmail.com	
8. Course Objectives	
Course Objectives	1- Introducing the importance of human rights and their important role in creating a spirit of tolerance and cooperation among members of society to enhance civil peace, and using the language of dialogue to solve problems instead of using violence. 2- The importance of empowering women to lead andeffectively participate in conflict prevention and resolution 3- . 1- Consolidating the principle of adhering to the law, knowing rights and duties, and not harming others under the pretext of freedom, but rather a person's knowledge of his limits because they endwith the freedom of others 4- 2- Knowing the relationship between human rights,freedom and democracy in a way that is compatiblewith the nature of the society in which one lives. Cognitive objectives A1- That the student knows the importance ofstudying human rights. A2- Enabling the student to be armed with a cultureof human rights to create a generation aware of the language of dialogue. A3- Creating a student qualified to take his role in society through his knowledge of his rights and

	duties and how to exercise freedom and democracyin a manner consistent with the peaceful transfer of power. -B - The skills objectives of the course . B1 - The skill of dialogue and persuasion . B2 - The ability to work among people to spread awareness of the culture of human rights B3 - Students' ability to evaluate themselves and their understanding of the principle of human rightsand how to deal with it 1-The style of dialogue between the student and the professor 2- Dialogue in the form of groups between students3-The professor and his students attend seminars related to human rights and discuss what was presented in those seminars D - Transferable general and qualifying skills (other skills related to employability and personal development). D1- That the student is armed with a culture of human rights and knowledge to employ it in the service of society . D2- To be a role model in the environment in whichhe lives. D3- To acquire the skill of managing dialogue and accepting the differences of others. D4- To learn in order to change and develop awareness. D5- How to integrate gender equality, women's empowerment, peace and security in various fields
9. Teaching and Learning Strategies	

Strategy	Introducing the importance of human rights and their important role in creating a spirit of tolerance and cooperation among members of society to enhance civil peace, and using thelanguage of dialogue to solve problems instead of using violence

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
weeks	hours	Learning output	Name of subject	Learning way	Evaluation way
1-8	**1**	Students should understand concepts in lecture	Concept of Human rights	Lecture , dissections	Stricture Evaluation
		Students should understand concepts in lecture	Legal resourcesof human rights	Lecture , dissections	Stricture Evaluation
9-12	**1**	For the studentto understand the role of rights in educating Iraqi society and how to trust sources	Sources of human rights inIraq - international recognition of human rights - the emergence of non- governmental organizations and their role inthe field of human rights	Lecture , dissections	Stricture Evaluation
13-17	1	That the student acquires knowledge andawareness of the importanceof these terms	Women and human rights: Women's rightsin the Iraqi Constitution - Universal Declaration of Human Rights - Convention on the Elimination of All Forms of Discrimination.	Lecture , dissections	Stricture Evaluation

18-22	**1**	That the student understands the importanceof these terms internationally, Arably, and locally	Freedom - its concept - its classifications - the variation in the level of freedom among the countries of the world - democracy - its concept - its main components - its advantages	Lecture dissections	Stricture Evaluation
		The student must understand these terms and have the ability to dealwith them smoothly	Democracy - its concept - its main components - its advantages	Lecture dissections	Stricture Evaluation
23-26	**1**	The ability to raise students' awareness and encourage them to conduct peaceful, civilized dialogue	The democratic constitution - its principles - constitutional democracy-	Lecture dissections	Stricture Evaluation
		The student must understand these terms and have the ability to dealwith them smoothly	Obstacles to democratic practice	Lecture dissections	Stricture Evaluation
27-30	1	The student must understand these terms and have the ability to deal	Types of democracy - its foundations - itsmechanisms	Lecture dissections	Stricture Evaluation

		with them smoothly			
		The ability to raise students' awareness and encourage them to conduct peaceful, civilized dialogue	The relationship between democracy and human rights	Discussion, blended learning, Active learning, using technological innovations	Paper work
11. Course Evaluation					
Monthly exam (40) / final exam (60)					
12. Learning and Teaching Resources					
Recommended books and references, scientific journals, reports...,		College books, resources, and the college website Dr. Riyad Hadi Aziz, Human Rights, University of Baghdad, 2005(Edited)Restore original			
B - Electronic references, Internet sites		Reliable websites for the purpose of providing them with information from reliable sources.			

.11 Course development plan

-Adding new paragraphs to the material in a manner consistent with

events at the Iraqi, Arab and global levels, and in light of human rights and what they need now in conjunction with technological developmen the information revolution, its challenges and human rights.

Course Description Form

1. Course Name	
Mathematics	
2. Course Code:	
101CsMa	
3. Semester / Year	
2023-2024	
4. Description Preparation Date	
3/3/2024	
5. Available Attendance Forms: Attendance -	
Actual mandatory attendance	
6. Number of Credit Hours (Total) / Number of Units (Total	
2 for each week (60 Hours) / 4 units	
7. Course administrator's name (mention all, if more than one name)	
Lecture :zahraa al batool Mahdi Email : zmahdi@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	Cognitive goals: - To recognize the mathematical laws to solve a specific exercise. - To remember the specific facts and symbols and to perform direct calculations. - To recognize the graphical representation of some functions. - Psychomotor Objectives - For the student to draw, for example, functions. - The student must have the ability to perform calculations mentally, estimate answers and verify their accuracy. - The student applies mathematics in multiple fields. Affective objectives - The student should participate in the discussion and solve activities during the lecture. - The student develops positive attitudes towards mathematics. - The student wants to spend additional time reading mathematics and solving some mathematical problems. - The student should know the aesthetic aspects of the geometric shapes in his environment.

9. Teaching and Learning Strategies	
Strategy	Various uses in teaching: ● Method of delivery and discussion style. ● Additional exercises as assignments. ● Scientific books. ● Question method. ● Brainstorming method.
10. Course development plan	
Development	The course was developed by adding some useful topics for students, such as group theory, geometric representation for the derivation of trigonometric functions, etc., as well as adding different and varied examples for most of the specific topics

11. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-7	**2**	Sets Theory, The Intervals, finite intervals, infinite intervals,	Sets Theory, The Intervals, finite intervals, infinite intervals,	Lecture, discussion	Daily and monthly exams +assignments
		Functions, Find domain of function, algebraic of functions, Type of functions	Functions, Find domain of function, algebraic of functions, Type of functions	Lecture, discussion	Daily and monthly exams +assignments
		Graph of functions, limits and continuity	Graph of functions, limits and continuity	Lecture, discussion	Daily and monthly exams +assignments
8-15	**2**	Trigonometric Functions	Trigonometric Functions	Lecture, discussion	Daily and monthly exams + assignments
		Logarithmic Functions	Logarithmic Functions	Lecture, discussion	Daily and monthly exams + assignments
16-25	**2**	Derivatives	Derivatives	Lecture, discussion	Daily and monthly exams + assignments
		Sequences and Series	Sequences and Series	Lecture, discussion	Daily and monthly exams + assignments

26-30	2	Integration	Integration	Lecture, discussion	Daily and monthly exams +assignments

Monthly exam (15) / homework (5) / Mid-year exam (20) / final exam (60)

13. Learning and Teaching Resources	
Required textbooks (methodology, if any)	Thomas Calculus, "Including Second- Order Differential Equation", 2005.
Main references (sources)	1. Thomas Calculus, "Including Second- Order Differential Equation", 2005. 2. MATH 221 FIRST SEMESTER CALCULUS, 2009.
Recommended supporting books and references (scientific journals, reports ...)	Many books and scientific research About the required learning outcomes
Electronic references, Internet sites	There are many websites related to each of the required learning outcomes

1. Course Name:
Arabic language
2. Course Code:
107CsAl
3. Semester / Year:
2024 -2023
4. Description Preparation Date:
2024 /3/3
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours
7. Course administrator's name (mention all, if more than one name)
Name: Kawthar Qasim Sahn Email: kqasim@uowasit.edu.iq
8. Course Objectives

Course Objectives	It aims to contribute to the formation of teachers who have competence, ability, good linguistic and scientific performance, and active scientific practice.
9. Teaching and Learning Strategies	
Strategy	- Introducing the student to the correct Arabic language words, their correct structures and methods in an interesting and attractive way. - Enabling the student to read correctly, and to acquire the ability to use the language correctly in communicating with others, such as speed, quality of delivery, and good expression.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Learning method
1-8	2	The student understands the meanings of texts in which objects appear and differentiates between them in terms of significance	The accusative ones object The effect is with him Effect for it Absolute effect	Explanation and discussion	Exams and daily discussion
9-16	2	Mistakes are widespread in our daily speech and in texts. We teach the student a set of these mistakes to avoid them	Common linguistic errors	Explanation and discussion	Exams and daily discussion
17-22	2	The student avoids making mistakes in writing “dha” and “dha” and differentiates between the meanings of the words -Writing numbers in the correct way	Writing the dā’ and ḍā’ Rules for writing numbers	Explanation and discussion	Exams and daily discussion
27 -23	2	Get acquainted with some Qur’anic texts and learn the subtle linguistic differences in the noble verses	Linguistic differences -The difference between rain and rain The difference between an oath and an oath The difference between light and light The difference between obligation and duty	Explanation and discussion	Exams and daily discussion

		beauty of the words in these texts and their meanings	For the jeweler	and discussion	and daily discussion

English language
2. Course Code:
215CsEL
3. Semester / Year:
2023–2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours
7. Course administrator's name (mention all, if more than one name)
Name: Assistant Lecturer Nagham Fadhil Hussein Email: nahussain@uowasit.edu.iq

8. Course Objectives	
Course Objectives	2- To enrich the students' knowledge about English language 2- Improve students' ability in listening, speaking, reading and writing 3-Mak the students feel with the English language in their study

9. Teaching and Learning Strategies	
Strategy	Discussion and ask questions, giving the chance to students to participa by speaking, reading and translation.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

		Questions, using bilingual dictionary, part of speech, words with more one meaning Present simple, present continuous, using have got &has got describing countries Past simple, past continuous, irregular verb, making connections, suffixes to make different words& negatives Review	Getting to know Unit 2: The way we live Unit3: It all went wrong Exercises and solutions	lectures ,	Examinations and daily activity
9-16	2	Quantity (much, many), some and any (someone, anyone, somewhere, anywhere…), learning buying things Review Verb patterns1, future intentions, hot verbs (have, go and come) What's like, comparative & superlative adjectives,	Unit4: Lets go shopping Exercises and solutions Unit 5: What do you want to do Unit 6: Tell me what's like	Theoretical lectures	Examinations and daily activity

		cities, synonyms and antonyms Present perfect and past simple ,for and since tense revision, past participle, adverbs and words pairs.	Exercises and solutions Unit 7: Fame		
17-22	2	Review Obligation (have(got), should& must) jobs, words that go together and compound nouns Time and conditional clauses, hot verbs (take, get, do and make) Verb patterns2 infinitive purpose , describing feelings and situations	Exercises and solutions Unit 8: Do's and don't Unit 9: Going places Unit 10: Scared to death	Theoretical lectures	Examinations and daily activity
23-27	2	Review Passive, verbs participles, v and nouns go toget second conditional, mi phrasal verbs	Exercises and solutions Unit 11: Thing that changed the world	Theoretical lecture	Examinations and daily activity
28-30	2	present perfect and present perfect	Unit:12 Dreams and reality		Examinations and daily activity

		word formation and adverbs past perfect, reported statement, hot verbs (bring, take, go and come)	Unit13: Earning a living Unit 14: Family ties	lecture	

11. Course Evaluation

- The 40th annual session is divided into
- 30 marks for the semester exams (at last two test in each semester0
-5 marks for participation, activities and homework

12. Learning and Teaching Resources

Required textbooks (curricular book any)	New Headway Pulse for Pre-Intermediate, John and Liz Soars, Oxford
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Microprocessor
2. Course Code:
213CsMp
3. Semester / Year:
2023–2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours and 60 practical hours
7. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name: Assist. porf. Dr Rawaa Ismael Farhan Email: ralrikabi@uowasit.edu.iq

8. Course Objectives	
Course Objectives	**1– Introducing the student to the basics of 8086 microprocessors, their internal structure, registers and the transportation system.** **2– The basic operations carried out by microprocessors: reading and writing.** **3– Methods of dividing memory, addressing patterns, and encoding instructions.** **4– Practical application of programming microprocessors in assembly language**

9. Teaching and Learning Strategies	
Strategy	1- Using practical examples 2- Project-based learning 3- Discussions and effective exchange of ideas 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled by practical applications

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	4	Fundamentals of Computer: Introduction, Definitions & Characteristics of computer components (Memory, CPU, I/O devices), computer types, CPU architecture, three –bus system architecture, Bus cycle timing, fetch and execute.	Microprocessor	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
9-16	4	Memory: Memory location & addresses, Segmented memory, Real memory, Physical address, Effective address, segmentation advantages.	Microprocessor	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

		addressing modes, Instruction sets, (form), data transfer instruction, Arithmetic instruction, logic instruction, string instruction.		and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
23-27	4	Coding: Transfe control, instruct Brief introductio machine co coding instruction, machine instruction.	Microprocessor	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
28-30	4	Structured Assembly Language: programming using procedure, Interrupts and interrupts service, routines, Stack (concepts and applications), i/0 Port_ i/o instruction	Microprocessor	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

11. Course Evaluation

- The annual course of 40 is divided into 20marks for the practical subject and 20 marks for the theoretical subject.
- Final out of 60

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Barry B. Brey, "The Intel Microprocessors 8086/8088, 80186/80188, 80286, 80386, 80486, Pentium, and Pentium Pro processor Architecture, Programming, and Interfacing", 6th Edition, Prentic-Hall Inc., 2003.
Main references (sources)	Walter A. Triebe, "The 8086 Microprocessor: Architecture, Software, and Interfacing Techniques", Prentic-Hall Inc., 1998.

Course Description Form

13. Course Name:
numerical analysis
14. Course Code:
220CsMm
15. Semester / Year:
2023–2024
16. Description Preparation Date:
3/3/2024
17. Available Attendance Forms:
Actual mandatory attendance
18. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours 60 practical hours
19. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical Name: teacher Muhammad Ali wannas Email: mwannas@uowasit.edu.iq
20. Course Objectives

	application of knowledge to understand digital electronics circuits. 2. To prepare students to perform the analysis and design of various digital electronic circuits. 3. Have a thorough understanding of the fundamental concepts and techniques used in digital electronics. 4 To understand and examine the structure of various number systems and its application in digital design.5. The ability to understand, analyze and design various combinational and sequential circuits. 6. Ability to identify basic requirements for a design application and propose a cost effective solution7. The ability to identify and prevent various hazards and timing problems in a digital design. 8. To develop skill to build, and troubleshoot digital circuits.

21. Teaching and Learning Strategies

Strategy	• Students acquire knowledge of the princip of numerical analysis • The student acquires the skill of using programs on the computer • Students acquire skills that enable them teach mathematics

10. Course Structure

Week	Hours	Learning Outcomes	Unit/Topic Name	Learni Metho
1-8	4	Introduction to Numerical Analysis	Numerical Analysis: What is it? Floating-point numbers and roundoff errors. Errors: Sources of error in numerical computation. Absolute and relative errors. Stable and unstable computations: Conditioning.	Lectu Notes YouTu
		Solving Systems of Linear Equations	LU and Cholesky factorizations. Pivoting and constructing an algorithm. Neuman series and iterative refinement. Norms of matrix and vectors. Solution of equations by iterative methods: (i) Jacobi method (ii) Gauss-Siedel method	Lectu Notes YouTu
9-16	4	Solution of Nonlinear Equations	Bisection method. False-position method. Newton's Method. Secant method. Fixed points and functional iteration. Acceleration of a fixed point.	Lectu Notes YouTu
17-22	4	Systems of Nonlinear Equations	Fixed point method. Newton method. Modified Newton method	Lectu Notes YouTu
		Interpolation	Finite difference operators. Newton forward difference interpolation formula. Newton backward difference interpolation formula. Besiel interpolation formula. Polynomial interpolation (Lagrange interpolation). Divided differences. Spline (degree one, two and three) interpolation. Least square theory (discrete and continuous)	Lectu Notes YouTu

23-27	4	Differentiation and Integration	Numerical differentiation. Numerical integration based on interpolation	Lectu Notes YouTu
28-30	4	Numerical Solution of Ordinary Differential Equations	Existence and uniqueness of solutions. Taylor-series method. Runge-Kutta methods. Multistep methods. Euler method. Modified Euler	Lectu Notes YouTu

11. Evaluation of the Course:	**12. Learning and Teaching Resources:**
Distribution of grades out of 100 based on tasks assigned to students:	**Prescribed Textbook:**
- Daily preparation	**- "Numerical Analysis"**
- Daily quizzes	**Main References:**
- Oral and written exams	**- "Numerical Analysis"**
- Reports, etc.	**Recommended Supplementary Books and References:**
	- "Numerical Analysis with Matlab Programming"
	Electronic Resources, Internet Sites:
	- atozmath.com

Course Description Form

1. Course Name:
data structures and algorithm
2. Course Code:
212CsDa
3. Semester / Year:
2023−2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours and 60 practical hours
7. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name: **Assistant Lectu** **Baraa Mohammed Hassn** Email: bhassan@uowasit.edu.iq
8. Course Objectives

Course Objectives	**1 − The student can choose the appropriate method for sorting and searching data according to the size and arrangement of the data.** **2 − The student acquires skills in different ways of storing data in computer memory and dealing with it.**

	represent data linearly and non–linearly. Learns how to choose the optimal algorithm **To solve a problem based on time and amplitude analysis.** **4 – Practical application of algorithms, how to deal with data, and sorting methods.**

9. Teaching and Learning Strategies

Strategy	1- Using practical examples 2- Project-based learning 3- Discussions and effective exchange of ideas 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled practical applications 7- Encouraging self-exploration a continuous learning

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	4	Introduction to data structure Benefits of data structures Types of data structures How to select the suitable data structure Representation element in one dimensional array Representation element in two dimensional array	data structures and algorithm	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics)

		array with structures			group system to complete mini projects 4-Daily questions and discussions
9-16	4	Stack : definition ,operations and algorithms Array representation of stack record implementation of stack Queue: definition,operations, and algorithms Array representation of Queue	data structures and algorithm	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
17-22	4	record implementation of Queue Circular queue: definition ,operations, and algorithms Array representation of Circular Queue recod implementation of Circular Queue Linked structures: sequential & dynamic storage Allocation Linked list: definition,operations, and algorithms	data structures and algorithm	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

		Double linked list Half-Year Break Graphs: Directed graphs Undirected graphs Trees: Types of t and its algorithms	data structures and algorithm	lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
28-30	4	Transfer binary tree to ordinary tree & vise versa Transfer mathematical expression to binary tree & vise versa Tree representation Searching algorithm : sequential &binary search Sorting algorithms : bubble,insertion,quick,and hashing storing	data structures and algorithm	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussis

11. Course Evaluation

- The annual course of 40 is divided into 15 marks for the practical subject and 25 marks for the theoretical subject, including 10 marks for the totals of projects and the daily.
- Final out of 60

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Data Structures and Algorithms Made Easy: Data Structures and Algorithmic Puzzles

Main references (sources)	Data Structures and Algorithms with C++: 100+ Coding Q&A (Code of Code)
Recommended books and references (scientific journals, reports…)	Data Structure and Algorithmic Thinking with Python
Electronic References, Websites	

Course Description Form

1. Course Name:
Computation theory
2. Course Code:
211CsCt
3. Semester / Year:
2023-2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours
7. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical :assistant teacher Rasha hani salman Email: rsalman@uowasit.edu.iq
8. Course Objectives

Course Objectives	It provides the theoretical foundations on which computer science is based, and it also gives the student the ability to think logically in

	mental thinking abilities and deduction and deduction, that is, it requires a creative mind.

9. Teaching and Learning Strategies

Strategy	1- Participate in lectures, discussions, and practical activities to enhance learning, including problem-solving sessions, group projects, and programming assignments to apply theoretical concepts in practice. 2- Use self-learning resources such as textbooks, online courses, and tutorials to explore computational theory concepts at yo own pace, complementing classroom learnin for deeper understanding. 3- Regularly practice solving arithmetic problems and exercises to enhance problem-solving skills and reinforce theoretical concepts, while working on solving various problems to develop diversity in applying different concepts. 4- Utilize visualization tools, softw simulations, and interactive platforms visually explore abstract concepts such machines, rules, and algorithms, which helps understanding complex theoretical ideas.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
L-8	4	Introduction, some application of computation theory basic operation on set ,plandrome ,kleene clouser ,regular expression , (definition, examples) regular	Computation theory	Blended learning, theoretical lectures,and problem-solving techniques in groups	1. Holding daily and quarterly tests, including theoretical and practical 2. Seminars, in which students are assigned topics 3. Finishing small jobs by

					groups 4-Daily queries and conversations
9-16	4	Language grammer ,grammars Contect free grammer Derivatuion tree Leftmost derivation Right most derivation Ambiguity in grammer	Computation theory	Blended learning, theoretical lectures,and problem-solving techniquesin groups	1. Holding daily and quarterly tests, including theoretical and practical 2. Seminars, in which students are assigned topics 3. Finishing small jobs by working in groups 4-Daily queries and conversations
17-22	4	-Finite automata (FA) -Deterministic Finite Automata (DFA) -Nondeterministic Finite Automaton -Proprieties of NFA -Convert Nondeterministic finite automation -Finite State Machine with Output (Moore and Mealy Machine)	Computation theory	Blended learning, theoretical lectures, and problem-solving techniques in groups	1. Holding daily and quarterly tests, including theoretical and practical 2. Seminars, in which students are assigned topics 3. Finishing small jobs by working in groups 4-Daily queries and conversations

		Form (CNF) -Conver CFG to CNF) -Chomsky Hierarc	theory	theoretical lectures, and problem-solving techniques in groups	daily and quarterly tests, including theoretical and practical 2. Seminars, in which students are assigned topics 3. Finishing small jobs by working in groups 4-Daily queries and conversations
28-30	4	- PushDown Automata (PDA) - Top – Down/ Bottom – Up Parsi -Turning machine	Computation theory	Blended learning, theoretical lectures, and problem-solving techniques in groups	1. Holding daily and quarterly tests, including theoretical and practical 2. Seminars, in which students are assigned topics 3. Finishing small jobs by working in groups 4-Daily queries and conversations

11. Course Evaluation

· The 40th annual session is divided into 35 grades for the practical subject and 5 grades for student participation in class and solving homework assignments..
· Final out of 60

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Introductiont to Computation Theory
Main references (sources)	Theory and Practice of Computation

(scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

12. Course Name:
System Analysis & Database
13. Course Code:
218CsSa
14. Semester / Year:
2023-2024
15. Description Preparation Date:
3/3/2024
16.Available Attendance Forms:
Actual mandatory attendance
17.Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours and 60 practical hours
18. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name: **Samar Kareem Tuama** Email: gl707@uowasit.edu.iq
19. Course Objectives

1. Understanding Fundamentals: Gain a comprehensive understanding of the fundamental concepts of Database Management Systems, including data models, database architectures, and the role of database systems in modern computing environments.
2. Relational Database Theory: Explore the theoretical foundations of relational databases, including relational algebra, normalization, and the principles of structured query language (SQL).
3. Database Design: Develop skills in conceptual, logical, and physical database design, encompassing entity-relationship modeling, schema refinement, indexing, and data storage optimization techniques.
4. Data Manipulation: Learn techniques for querying, inserting, updating, and deleting data in a relational database using SQL, and understand the importance of transaction management and concurrency control in ensuring data integrity.
5. Database Administration: Acquire knowledge of database administration tasks, such as user management, backup and recovery, performance tuning, and security measures to protect sensitive data.
6. Data Modeling and Analysis: Gain proficiency in data modeling techniques for representing real-world entities and relationships in a database context, and explore methods for analyzing and interpreting data stored in databases to support decision-making processes.
7. Database Connectivity: Understand the mechanisms for connecting databases to applications, including the use of application programming interfaces (APIs), middleware, and object-relational mapping frameworks.
8. Emerging Trends and Technologies: Stay abreast of emerging trends and technologies in the field of database management, such as NoSQL databases, distributed databases, cloud-based database services, and big data analytics platforms.
9. Database Security and Privacy: Develop an awareness of the security and privacy issues inherent in database systems, and learn best practices for safeguarding sensitive information against unauthorized access, data breaches, and cyber threats.
10. Real-World Applications: Apply database management concepts and techniques to real-world scenarios and projects, including the development of database-driven applications, data warehousing solutions, and business intelligence systems.

20. Teaching and Learning Strategies

Strategy	1- Using practical examples 2- Project-based learning 3- Discussions and effective exchange of ideas 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled by practical applications 7- Encouraging self-exploration and continuous learning

21. Course Structure

			subject name	method	method
1-8	4	• Introduction to Database Management Systems (DBMS) • Object of Database Management Systems (DBMS) • Database Design Data Redundancy • Purpose of Database Systems	System Analysis Database	Theoretical lectures	1- Conducting theoretical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
9-16	4	• Database Schema -Database Instanc • Database Management System (DBMS Overview) • DBMS – Architecture • DBMS - Data Models	System Analysis Database	Theoretical lectures	1- Conducting theoretical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
17-22	4	• Entity-Relationship Model • Relational Model • Primary key in DBMS • How to choose a primary key? • Foreign key in DBMS	System Analysis Database)	Theoretical lectures	1- Conducting theoretical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

		• Candidate Key in DBMS • ER diagram consists of • - Entity sets. • -Relationship sets. • Many-to-many: • One-to-many: • One-to-one • Data Independence	Analysis Database	lectures	Conducting theoretical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
28-30	4	• Logical Data Independence • Physical Data Independence • Normalization • 1. First Normal Form (1NF). • 2. Second Normal Form (2NF). • 3. Third Normal Form (3NF). • Problems without Normalization • Functional dependency • What is Partial Dependency (PD)? • Structure Query Language (SQL) • SQL Types: • System Analysis and Design • Computer system: • Systems Development Methods • Systems Analysis and Design	System Analysis Database	Theoretical lectures	1- Conducting theoretical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

22. Course Evaluation

The annual course of 40 is divided into 15 marks for the practical subject and 25 marks for the theoretical subject, including 10 marks for the totals of projects and the daily.
- Final out of 60

23. Learning and Teaching Resources

Required textbooks (curricular books, if any)	"Database System Concepts" by Abraham Silberschatz, Henry F. Korth, and S. Sudarshan – Fundamentals of Database Systems" by Ramez Elmasri and Shamkant B. Navathe
Main references (sources)	"Database Management Systems" by Raghu Ramakrishnan and Johannes Gehrke
Recommended books and references (scientific journals, reports…)	• IEEE Transactions on Knowledge and Data Engineering (TKDE) - This journ focuses on research in knowledge and data engineering, including topics suc as data mining, machine learning, distributed databases, and data warehousing. • Journal of the ACM (JACM) - Publishes high-quality research articles in

	systems, algorithms, and complexity theory.
Electronic References, Websites	**Database Journal**: Database Journal of articles, tutorials, and news on datal management topics, including database des administration, performance tuning, emerging technologies

Course Description Form

1. Course Name:
Baath crimes
2. Course Code:
222Csbc
3. Semester / Year:
2023-2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
30 theoretical hours
7. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name :M.M. Alaa Ab Amir Ahmed Email: alaamohammed@uowasit.edu.iq
8. Course Objectives

Course Objectives	**This course aims to introduce students and inform them of the heinous crimes committed by the Baath regime in Iraq** **Track it, document it.**

	our country of tragedies, woes and calamities carried out by the unjust Baath regime. **Which included all aspects of social life.**

9. Teaching and Learning Strategies

Strategy	1- Theoretical lectures 2- Scientific discussions are analytical 3-Continuous assessment: Evaluate students' learning on an ongoir basis to determine their strengths and weaknesses.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	1		Introduction to the academic subject - The Iraqi Supreme Criminal Court Lav 2005 against the Baath regime. - The concept of Baath crimes and the types. - Definition of crime. - Crime departments. - International crimes. - Decisions issued by the Supreme Crim Court. - The Baath regime's psychological crir and their effects - Mechanisms of psychological crime Psychological effects of crimes.	theoretical theoretical theoretical theoretical theoretical theoretical theoretical theoretical theoretical theoretical theoretical	Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis

			The Baath regime's social crimes and the effects on society. - The Baath regime's economic crimes an their effects. - The international crimes of the Baath regime and their effects. - The most prominent violations of the Ba regime in Iraq. - The Baath regime's position on religion - Violations of Iraqi laws. - First semester exam	theoretical theoretical theoretical theoretical theoretical theoretical	Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis
17-22	1		-Human rights violations. - Political violations of the Baath regime - Military violations of the Baath regime - The most prominent torture prisons of t Baath regime. - Environmental crimes in Iraq. - Military and radioactive pollution	theoretical theoretical theoretical theoretical theoretical theoretical theoretical	Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis

			- Destruction of cities and villages by the Baath regime. - Drying the Iraqi marshes. Draining the Iraqi marshes.	sessions (seminar) Discussion theoretical theoretical theoretical theoretical theoretical theoretical theoretical theoretical	minute paper test Short reports Questions and discussions Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis
28-30	1		- Mass grave crimes. - Chronological classification of mass graves 1963-2003. - Creating cemeteries for the genocide committed by the Baath regime. - Pictures of power crimes. - Second semester exam	theoretical theoretical theoretical theoretical	Discussion and analysis Discussion and analysis Discussion and analysis Discussion and analysis

11. Course Evaluation

- The 40th annual session is divided into
- 30 marks for the semester exams (at least two tests in each semester)
- 5 marks for participation, activities and reports.
- 5 marks for total daily attendance

12. Learning and Teaching Resources

(curricular books, if any)	
Main references (sources)	1- The Iraqi Center for Documentation of Baath Crimes, reports condemning the Baath regime (human rights violations) 2- Abdul Razzaq Al-Saadi, A Bitter Legacy (Lessons from the De-Baathification Process in Iraq)
Recommended books and references (scientific journals, reports…)	The Poisoned Chalice (United Nations reports on decision of the Iraqi Supreme Court in the Dujail ca
Electronic Referenc Websites	

Course Description Form

24. Course Name:
Object Oriented Programming
25. Course Code
219CsOo
26. Semester / Year:
2023-2024
27. Description Preparation Date:
3/3/2023
28.Available Attendance Forms:
Actual mandatory attendance
29.Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours and 60 practical hours
30. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name: Ilyas Khudhair Yalwi Email: Ilyas@uowsit.edu.iq
31. Course Objectives

	1. Develop proficiency in writing clear, modular, and efficient C++ code following best practices. 2. Explore control structures, functions, arrays, and pointers to manipulate data and control program flow. 3. Understand the principles of object-oriented programming (OOP) and apply them using classes and inheritance. **4**. Learn debugging techniques, error handling, and memory management to create robust and reliable C++ programs.

5. Teaching and Learning Strategies

Strategy	1- Using practical examples 2- Project-based learning 3- Discussions and effective exchange of ideas 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled by practical applications 7- Encouraging self-exploration and continuous learning

6. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	4	Overview for functions and Functions (introduction, defining a function, return statement, types of functions. actual and formal arguments, local and global variables, recursive function	Object Oriented Programming	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

9-16	4	Introduction to OOP and its main features 1- Encapsulation and data hiding 2- Inheritance and reuse 3- Polymorphism	Object Oriented Programming	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
17-22	4	-Defining the structure of (Structure , Class , Object) -Types of members -Class Constructer and Destructor	Object Oriented Programming	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
23-27	4	- Inheritance in Class - Types of Inheritance - Friend Function - Friend Class	Object Oriented Programming	Theoretical and practical lectures, practical application in	1- Conducting theoretical and practical

				the use of the group system to solve problems, and blended learning	and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
28-30	4	Constant Member Argument - Constant Member Function - Static Members - Member Pointer - References Member.	Object Oriented Programming	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning.	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

7. Course Evaluation

- The annual course of 40 is divided into 15 marks for the practical subject and 25 marks for the theoretical subject, including 10 marks for the totals of projects and the daily.
- Final out of 60

8. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Objected Oriented Programming with C++ ,Four Edition

Recommended books and references (scientific journals, reports…)	Mastering C & C++ Programming: From Fundamen to Advanced
Electronic References, Websites	

Course Description Form

Course Name:
Developmental psychology
Course Code:
217CsDp
Semester / Year:
2023/2024
Description Preparation Date:
3/3/2024
Available Attendance Forms:
Actual mandatory attendance
Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours
Course administrator's name (mention all, if more than one name)
Name: Noora Karim Saleh Email: nsalih@uowasit.edu.iq

22. Course Objectives

Course Objectives ... Increasing the student's understanding of the educational and social reality throughout the ages, realizing the educational process at its utmost necessity, and understanding educational theories on various peoples, ancient and modern. Interpreting the educational process from a historical and philosophical point of view 0 Shedding light on upbringing and education, highlighting the importance of the role of social pedagogical upbringing institutio and helping students to train and feel the importance of the educational process.	• ..... • ..... • .....

It is also a science that describes and explains the impact of educational systems on determining the educational reality revea by schools Historical reality, past and present Philosophical education, defining the goals of community education, and applying educational concepts	

23. Teaching and Learning Strategies	
Strategy	

24. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evalu n me

		maturity Life stages and developmental demands Resear methods in psychology Grow Factors affecting growth Maturity and learning			
9-16	2	Deprivation Developmental psychology theories The child's physical development The child's linguistic development The child's ment development The child's moto development			
17-22	2	The child's emotional development Congenital development of t child Moral standards			

		formation Ideals			
20-27	2	Social development of t child Means of socialization adolescence The nature of adolescence, the stages of adolescence			
28-30	2	Physical development of the adolescent Mental development moral development Social growth Family patterns School problems tendencies and trends Choosing a profession Adolescent and school Adolescents and peers			

		Adolescents a the media The importance teenage work			

25. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
26. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Developmental Psychology
Main references (sources)	Developmental Psychology
Recommended books and references (scientific journals, reports…)	Jamal Hussein Al-Alusi Umaima Ali Khan Psychology of childhood and adolescence

	Ahmed Abdel Latif Abu Saad, Developmental Psycholo Hisham Ahmed Ghorab, Developmenta Psychology
Electronic References, Websites	

1- Course name
Educational administration
2. Course Code:
216ScEm
2- Semester /yearly
2023/2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours
7. Course administrator's name (mention all, if more than one name)
Name: Kareem Anwer Jasim **Email: kjasem@uowasit.edu.iq**
8. Course Objectives

9. Teaching and Learning Strategies

Strategy	**Using educational discussion (educational dialogue), which depends on exchanging ideas to reach facts** **Use of modern computer technologies**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method		lu on ho

		Concepts of educational administration and their characteristics **Educational management skills for educational management patterns** **Centralization and decentralization in educational administration. Educational administration between centralization and decentralization**	
9-16	2	**The school administration** **Traditional classical schools Educational administration School administration jobs** **School management styles** **Foundations of democratic administration** **School principal skills, factors affecting educational administration**	
17-27	2	**The concept of classroom management** **The importance of classroom management** **Important areas of classroom management** **Classroom management objectives** **Factors affecting classroom management** **The importance of classroom interaction**	
28-30	2	**The concept of educational supervision** **Objectives of educational supervision** **Foundations of educational supervision** **Educational supervision jobs** **Types of educational supervision** **Methods for supervising educational enlightenment** **Educational thought** **School and community** **Newspapers and magazines goals council parents** **Secondary education general objectives** **Specific goals and stages of education** **Secondary The importance of secondary education** **Problems facing secondary education**	

11. Course Evaluation
Distributing the score out of 100 according to the tasks assigned to the student such a preparation, daily oral, monthly, or written exams, reports .... etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Educational administration

	Masirah Publishing House, Amman Abu Shindi, Sahar. (2011), Human Res Management in Educational Institutions, Publishing and Distribution House, Amman, Jorda Abu Sheikha Nader, (2002), Time Manag Majdalawi Publishing House, Amman, Jordan. Abu Ghazala, Muhammad (2005), Building a t program for department directors in the Jor Ministry of Education in light of reality and contem administrative trends, unpublished doctoral Amman Arab University for Postgraduate S Amman, Jorda
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course description form

32. Course Name:
Curriculum and textbook
33. Course Code:
214CsRm
34. Semester / Year:
2023−2024
35. Description Preparation Date:
3/3/2024
36.Available Attendance Forms:
Actual mandatory attendance
37.Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours
38. Course administrator's name (mention all, if more than one name)
Lecturer: Ass. Prof. Dr: Esraa salah hasoon Alomari Email: ealomari@uowasit.edu.iq
39. Course Objectives

Course Objectives	Facts, concepts, generalizations, laws, theories, objectives of science, characteristics of science, assumptions of science, researcher's postulates, objectives of scientific research
9. Teaching and Learning Strategies	
Strategy	Using educational discussion (educational dialogue) which depends on exchanging ideas to reach the facts Using modern technologies (computer)

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	2	Sources of scientific research, characteristics of scientific research, characteristics of scientific thinking, obstacles to scientific thinking,	Curriculum and textbook	Explanation and discussion	Giving daily homework and checking daily attendance.

		research plan, types of hypotheses, skills of writing scientific research, index n			
9-16	2	Research (Contents) References and sources, methods of collecting scientific material, designing the research title page, research methods	Curriculum and textbook	Explanation and discussion	Giving daily homework and checking daily attendance.
17-22	2	Historical research, historical research, descriptive research and its types, stages of the descriptive method	Curriculum and textbook	Explanation and discussion	Giving daily homework and checking daily attendance.
23-27	2	Experimental resear variables and their types, control metho	Curriculum and textbook	Explanation and discussion learning	Giving daily homework and checking daily attendance.
28-30	2	Extraneous variable experimental resear in natural sciences types of experimen designs, scientific research tools: samples, questionna (referendum), interview, observati tests	Curriculum and textbook	Explanation and discussion	Giving daily homework and checking daily attendance.

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, and reports... 30 points for the subject exams (two tests), 5 points for daily attendance, 5 points for daily participation

12. Learning and Teaching Resources

Required textbooks (curricular boo if any)	https://www.anu.edu.au/students/academic-skills/research-writing/journal-article-writing/writing-an-abstract

	writing-a-compelling-article-introduction
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	s://guides.lib.uci.edu/c.php?g=334338&p=2249903

Course description form

1. Course Name:
Arabic language
2. Course Code:
221CsAl
3. Semester / Year:
2023-2024
4. Description Preparation Date:
3/3/2023
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours
7. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name: assistant lecture Kwather kasem sahan **Email: kqasim@uowasit.edu.iq**
8. Course Objectives

Course Objectives	**It aims to contribute to the formation of teachers with competence, ability, good linguistic and scientific performance, and active scientific practice**
13. Teaching and Learning Strategies	
Strategy	**Introducing the student to the correct Arabic language words, structures and sound methods in an interesting and attractive way. Enable the student to read correctly, and to acquire the ability to use the language correctly in communicating with others, such as speed, quality of delivery and good expression**
14. Course Structure	

		Learning Outcomes	subject name	method	method
1-8	2	Errors have spread in our daily speech and in the texts, we teach the student a set of these mistakes to avoid them	Installations with effect with effect for which the absolute effect	Explanation and discussion	Exams and daily discussion
9-16	2	Avoid the student falling into error in writing Dhad and Zaa and differentiate between the meanings of words - writing numbers in the correct way	Common linguistic errors	Explanation and discussion	Exams and daily discussion
17-22	2	- Reading some Quranic texts and knowing the nuances of linguistic differences in the noble verses	Writing Dhad and Zaa Rules for writing numbers	Explanation and discussion	Exams and daily discussion
23-27	2	The student touches the beauty of the words in these texts and their meanings	Linguistic differences - the difference between rain and rain The	Explanation and discussion	Exams and daily discussion

			between the oath and the oath The difference between light and light The difference between obligatory and obligatory		
28-30	4	Constant Member Argument - Constant Member Function - Static Members - Member Pointer - References Member.	Poetic texts by the jeweler	Explanation and discussion	Exams and daily discussion

15. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly and written exams, discussion and evaluation of research papers.... etc. Semester / 30% Daily preparation, activities and attendance / 10% Final exam / 60%	
16. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	General Arabic Language for Non-Specialists / Dr. Kazem Hamad Moharath

	the rules of syntax and literature / Siddiq Ismail Hafez
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

Curriculum and method teaching
2. Course Code:
324CsCt
3. Semester / Year:
2023-2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
30 My watch
7. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name :Assistant teac Abbas Hadi Abdel Sayed Email: ahadi@uowasit.edu.iq
8. Course Objectives

Course Objectives	**- Building a good background for students of computer science departments on teaching methods in general.** **-How to employ it during the application period and prepare teaching plans for the applied student.** **-Training students on classroom management and using teaching methods and activities** **Teaching methods and student evaluation.**

	represents applications of computer teaching methods.

9. Teaching and Learning Strategies

Strategy	1-Active learning: Cooperative Learning: Dividing students into small groups work on group projects or assignments. Project-based learning: Assigning students to real-world projects that challenge them and require them to apply wh they have learned. For problem-based learning: posing problems for students solve using thinking skills To critique and solve problems. 2- Use of technology: Integrating technology into the educational process: using computers, the Internet, and tablets in educational activiti Using e-learning platforms: Using e-learning platforms to present course content and allow interaction between the student and the teacher. Linking theory to practice 3-Continuous assessment: Evaluate students' learning or ongoing basis to determine their strengths and weaknesse

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	2	Enabling students to know the nature of teaching Teaching as an experience Teaching as a discipline Teaching as a communication process Teaching concept Teaching as a science and an art Learning and teaching Education and teaching Elements of the educational process Foundations and principles of teaching Characteristics of a successful teacher Pillars of the teaching process The concept of teaching strategy The concept of teaching method	Teaching - its nature - Its foundations its principles His concept	Discussion sessions (seminar) Discussion Cooperative education Active learning	One minute paper test Short reports Questions and discussions A written test

		method The rules on which teaching methods are based The difference between learning and teaching Types of teaching methods The difference between the concept of strategy, method and method			
9-16	2	Educational goals Sources for deriving educational objectives Levels of educational objectives Meaning of behavioral goal Formulate the behavioral goal Conditions for behavioral goals How to set behavioral goals Classification of behavioral goals Classification of cognitive domain Classification of the emotional domain Classification of the psychomotor domain The importance of formulating behavioral goals Regarding the teacher Regarding the student Regarding scientific material	Educational objectives	Discussion sessions (seminar) Discussion Cooperative education Active learning	One minute paper test Short reports Questions and discussions A written test
17-22	2	Classification of teaching methods Lecture method Discussion method Interrogation method Survey method Exploration method Method of solving problems Programmed learning method using computers Computer assisted education Advantages of programmed education Using a computer	Teaching metho Classification Its types Her class questions	Discussion sessions (seminar) Discussion Cooperative education Active learning	One minute paper test Short reports Questions and discussions A written test
23-27	2	Planning concept The concept of planning in teaching The importance of planning for teaching The foundations of good planning Characteristics of effective planning Types of teaching plans Daily plan Preparing the daily study plan The importance of preparing a daily study plan The importance of daily preparation lessons	Lesson planni	Discussion sessions (seminar) Discussion Cooperative education Active learning Training students to prepare a daily plan	One minute paper test Short reports Questions and discussions A written test

		Preparation notebook			
28-30	2	Calendar concept Calendar functions Types of calendar Calendar methods Objective tests Essay tests	Calendar	Discussion sessions (seminar) Discussion Cooperative education Active learning Training students on how to formulate objective and essay questions	One minute paper test Short reports Questions and discussions A written test

11. Course Evaluation

- The 40th annual session is divided into
- 30 marks for the semester exams (at least two tests in each semester)
- 5 marks for participation, activities and reports.
- 5 marks for total daily attendance

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of general curricula and teaching methods
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Learning and teach strategies
Electronic References, Websites	

1. Course Name:
Artificial Intelligence
2. Course Code:
322CsAi
3. Semester / Year:
2023-2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours and 60 practical hours
7. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name: Assist. porf. Dr Rav Ismael Farhan Email: ralrikabi@uowasit.edu.iq
8. Course Objectives

Course Objectives	**1-Introducing the student to the basic concepts and applications of artificial intelligence.** **2- Using artificial intelligence algorithms in the research process.** **3- Drawing planning strategies to solve various problems.** **4- Using artificial intelligence in natural language processing.**

9. Teaching and Learning Strategies	
Strategy	1- Using practical examples

	3- Discussions and effective exchange of ideas 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled by practical applications 7- Encouraging self-exploration and continuc learning

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning	ethoc
1-8	4	Fundamentals of Artificial Intelligence (AI): General introduction to artificial intelligence, foundation and history of artificial intelligence, applications of artificial intelligence, architecture of a artificial intelligence, language and environment of A.I. and artificial intelligence branches.	Artificial Intelligence	Theoretica practical a the use o problems,	nd cation grou blende
9-16	4	state space: define the problem as a state space , production system(add new example) ,problem characteristics , some example of A.I problem (8-puzzle , monkey and banana,….)(add new example), search technique (blind search) DFS and BFS(add new example), intelligent search technique (hill climbing, generate and test), best first search(add new example), A-algorithms(add new example) , A*- algorithms(add new example),min – max and alpha-beta algorithms(add new example)	Artificial Intelligence	Theoretica practical a the use o problems,	nd cation grou blende
17-22	4	Problems: problem reduction and (and/ or) graph(add new example), forward and backward chaining(add new example), black board approach(add new example).	Artificial Intelligence	Theoretica practical a the use o problems,	nd cation grou blende

		representation: (propositional log predicate logic) (new example), log representation, (procedural network structured) representations, clause f algorithm, resolu in prepositional l algorithm;	Artificial Intelligence	and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
28-30	4	prepositional resolution (add example), unification algorit resolution predicate l algorithm; resolu (add new examp (continue resolution predicate l algorithm; resolu (add new example Expert System: expert system (introduction, architecture, characteristic), rule-based application of expert system, example on expert system, introduction to neural network, (continue to) introduction to neural network, introduction to genetic algorithm.	Artificial Intelligence	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

- The annual course of 40 is divided into 20marks for the practical subject and 20 marks for the theoretical subject. - Final out of 60

12. Learning and Teaching Resources	
Required textbooks (curricu books, if any)	"Luger, George F. (2009) Artificial Intelligence: Structures and Strategies for Complex Problem Solving, 6th edition.
Main references (sources)	Boston: Addison-Wesley Pearson Education (Book)"

Course Description Form

Course Name:
Computer architecture
Course Code:
340CsCa

2023-2024
Description Preparation Date:
3/3/2024
Available Attendance Forms:
Actual mandatory attendance
Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours
Course administrator's name (mention all, if more than one name)
Responsible for the theoretical course Name: Lec. zamen abood ramadaan Email: z.ramadaan@uowasit.edu.iq

27. Course Objectives	
Course Objectives	**1. Introduction the student to the basics of computer architecture.** **2. Components of computer architecture and its basics.** **3. The security challenges and problems it suffers from.**

28. Teaching and Learning Strategies	
Strategy	1- Using practical examples 2- Project-based learning 3- Discussions and effective exchange of ideas 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled by practical applications

	learning

29. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	4	Cache Memory &Memory Address Mapping & DIRECT MAPPING:& Fully Asstiative Mapping	Computer architecture	Theoretical and, the use of the group system to solve problems, and blended learning	1- Conducting theoretical (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
9-16	4	Cache Memory &Memory Address Mapping & DIRECT MAPPING:& Fully Asstiative Mapping	Computer architecture	Theoretical and, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

		&Replacement Technique & Input/ output (I/O)&Direct Memory Access(DMA) & Input/ Output (I/O) Concept	architecture	and, the use of the group system to solve problems, and blended learning	Conducting theoretical (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
23-27	4	PrInterrupt-Driven I/Oogrammed I/O & Direct Memory Access (DMA) & Single bus, detached DMA-I/O confrguration. &Single bus, Integrated DMA- I/O confrguration.	Computer architecture	Theoretical and, the use of the group system to solve problems, and blended learning	1- Conducting theoretical (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
28-30	4	Using separate I/O bu . -I/O Channals A Processors AsstiativeOperation Asstiative Memo Memories Applications &Ca Coherence B Concept	Computer architecture	Theoretical and, the use of the group system to solve problems, and blended learning	1- Conducting theoretical (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions

					discussions

30. Course Evaluation

- The annual course of 40 is divided into 35 marks for the theoretical subject, including 5 marks for the totals of projects and the daily.
- Final out of 60

31. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Fundamental of computer architecture
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

Course Name:
Data base design

328CsDd
Semester / Year:
2023–2024
Description Preparation Date:
3/3/2024
Available Attendance Forms:
Actual mandatory attendance
Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours and 60 practical hours
Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name: Lec. Marwa Mohammed Abood Email: gl1101@uowasit.edu.iq Responsible for the practical course Name: Email: :@uowasit.edu.iq

32. Course Objectives	
Course Objectives	**4. 1- Enable the student to understand the importance of collecting and analyzing information correctly and how to use it to build** **5. Good designs for tables.** **6. The importance of DBMS and its classifications.** **7. Concepts of relational algebra.** **8. Using models of relationships, advanced entities EER and entities and converting them to relational tables.** **9. Conversion of the relational chart S directives**

33. Teaching and Learning Strategies	
Strategy	1- Using practical examples

	3- Discussions and effective exchange of ideas 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled by practical applications 7- Encouraging self-exploration and continuc learning

34. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	4	Introduction to dB concepts, Goals of Effective Database Design, Classification of (DBMS), Database design steps, E-R Model (Constructs), Basic Objects: Entities, Relationships, Basic Objects: Relationships, Total /Partial participation & Alternative Conceptual Data Modeling Notations,	Data l design	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
9-16	4	Logical Database Design: ER to Relational, Entity Sets to Tables Relationship Sets (without Constraints) to Tables, Translating Relationship Sets with Key Constraints, Translating	Data l design	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to

		Sets ER to Relational: Additional Examples, (EER) Superclass / Subclass Generalization/ Specialization Union or category Aggregation, Translating ER Diagrams to relational schema, Transforming the Conceptual Data Model to SQL, Transforming the Conceptual Data Model to SQL			mini projects 4-Daily questions and discussions
17-22	4	Logical Database Design, Relational algebra, Relational calculus, Advanced SQL: TRIGGERS AND ACTIVE DATABASES, STORED PROCEDURES, view	Data l design	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

		View in MySQL, Index Basic Concepts, SQL Joins: Inner join Left join, SQL Joins: Right join Full join Cross join, Accessing SQL from a Programming Language	Data design	application in the laboratory, the use of the group system to solve problems, and blended learning	Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
28-30	4	New DB Data Mod Types, Ne DB Data Model Ty	Data design	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

35. Course Evaluation

- The annual course of 40 is divided into 15 marks for the practical subject and 25 marks for the theoretical subject, including 5 marks for the totals of projects and the daily.
- Final out of 60

36. Learning and Teaching Resources

2006 2. DATABASE MANAGEMENT SYSTEI Third edition. 2003 3. FUNDAMENTALS OF Database Syste SIXTH EDITION. 2011 4. Database Modeling & Design Fourth Editi 2006 5. Begging database design solution, F Stephens, Wiley Publishing, Inc.,2009 6. Database Solution step by step, Thomas Connolly, Carolyn E. Begg, 2004	
Electronic References, Websites	
1. MySQL https://www.mysql.com/ 2. SQL Course https://www.sqlcourse.com/ 3. SQL Bolt https://www.sqlbolt.com/	

Course Description Form

1. Course Name:
visual basic
2. Course Code:
340 Csvb
3. Semester / Year:
2023-2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance

60 theoretical hours and 60 practical hours

7. Course administrator's name (mention all, if more than one name)

Responsible for the theoretical and practical course Name **Assistant Lectu**
Baraa Mohammed Hassn
Email: bhassan@uowasit.edu.iq

8. Course Objectives

Course Objectives	**– The course aims to provide students with the basic concepts and tools for configuring an environment (.NET FRAMEWORK) to give them the ability to design and develop applications on the (WINDOWS) environment using the programming language (VISUAL BASIC.NET) and the database (SQL SERVER).**

9. Teaching and Learning Strategies

Strategy	1- Using practical examples 2- Project-based learning 3- Discussions and effective exchange o ideas 4- Use interactive resources and softwa applications 5- Enhancing cooperation and teamwor 6- Providing theoretical lessons paralleled by practical applications 7- Encouraging self-exploration a continuous learning

10. Course Structure

		Learning Outcomes	subject name	method	method
1-8	4	Basic components of VB windows toolbox variables Library function & string function branching statements	visual basic	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
9-16	4	looping statements control tools option combo box, check box, button frame ,list box directory and files shapes control , box massage	visual basic	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
17-22	4	arrays dimensional tow-array bubble and selection sort sequential and binary search collections control array	visual basic	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

		menus the menu editor , sub menus) Pop-up m (creating using)	basic	and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions 1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
28-30	4	the common dialogs control procedures and modules subroutines and functions Mechanisms argument – passing graphics controls	visual basic	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
11. Course Evaluation					

and 25 marks for the theoretical subject, including 10 marks for the totals of projects and the daily. - Final out of 60

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**Visual Basic .NET**
Main references (sources)	visual-basic--net-language
Recommended books and references (scientific journals, reports…)	Introduction to Visual Basic.NET
Electronic References, Websites	

Course Description Form

1. Course Name:
Computer graphics
2. Course Code:
321CsCg
3. Semester / Year:
2023-2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance

(Total)
60 theoretical hours and 60 practical hours

7. Course administrator's name (mention all, if more than one name)

Responsible for the theoretical and practical course Name: Dr Saif Hameed Abbood
Email: saifhameed.it@gmail.com
Responsible for the practical course Name: BSc. Nooralhuda Lateef
Email :nooralhudalateef@gmail.com

8. Course Objectives

Course Objectives	- Understand the basics of computer graphics. - Explore the concept of computer graphics and its digital representation. - Comprehend computer drawing strategies and how to display them on electronic screens. - Understand computer graphics algorithms. - Grasp static and animated engineering graphics in various dimensions and their direct relevance to all electronic applications, especially smart applications.

9. Teaching and Learning Strategies

Strategy	1- Using practical examples 2- Project-based learning 3- Discussions and effective exchange of ideas 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled b practical applications 7- Encouraging self-exploration a continuous learning

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	4	What are computer graphics? Overview. Computer graphics applications. Display hardware.	Computer graphics	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
9-16	4	Graphics elements: - Mode (text mode, graphic mode) Picture elements. Raster scan display Draw the point algorithm.	Computer graphics	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
17-22	4	Colors and intensities. Raster and vector. Raster types. Draw horizontal line algorithm. Draw vertical line algorithm.	Computer graphics	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects

					questions and discussions
23-27	4	Cathode ray tube. Raster scan. Random scan or vector scan. Introduction of frame buffer. Draw the slop algorithm. DDA algorithm	Computer graphics	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
28-30	4	Frame buffer: Normal frame buffer. RGB frame buffer. Bresenham's line algorithm. Midpoint algorithm Bresenham's ci algorithm	Computer graphics	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning.	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

11.Course Evaluation

- The annual course of 40 is divided into 15 marks for the practical subject and 25 marks for the theoretical subject, including 10 marks for the totals of projects and the daily.
- Final out of 60

12.Learning and Teaching Resources

any)	Computer graphics: principals and practice.
Main references (sources)	Computer Graphics: Principles and Practice is a textbook written by James D. Foley, Andries van Dam, Steven K. Feiner, John Hughes, Morgan McGuire, David F. Sklar, and Kurt Akeley and published by Addison–Wesley
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

Course Name:
Software Engineering
Course Code:
325CsSw
Semester / Year:
2023−2024
Description Preparation Date:
3/3/2024
Available Attendance Forms:
Actual mandatory attendance
Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours
Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name: Dr Ali Fadhil Rasl Email: alirashid@uowasit.edu.iq
Course Objectives

Course Objectives	

	students to be successful professionals in the field with solid fundamental knowledge of software engineering. **to be successful professionals in the field with solid fundamental knowledge of software engineering** **Utilize and exhibit strong communication and interpersonal skills, as well as professional and ethical principles when functioning as members and leaders of multi-disciplinary teams** **Apply their foundations in software engineering to adapt to readily changing environments using the appropriate theory, principles and processes** • **Understand the concept of Software Engineeing** • **Knowledge of Software Life cycle Steps**
13. Teaching and Learning Strategies	
Strategy	1- Using practical examples 2- Project-based learning 3- Discussions and effective exchange of idea 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled by practical applications 7- Encouraging self-exploration and continuc learning
14. Course Structure	

		Outcomes	subject name	method	method
1-8	2	• Introduction to Software Engineering • Object of Software Engineering • Software Engineering life cycle OR System Development Life Cycle • SDLC Phases • Planning Phases • Analysis Phases • Design Phases • Implementation Phases	Software Engineering	Theoretical lectures	1- Conducting theoretical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
9-16	2	• System Development Methodologies • Waterfall Development Methodology • Parallel Development Methodology • V-model development Methodology • Phased Development Methodology • Prototyping Methodology • Throwaway Prototyping Methodology • Selecting a Methodology Table		Theoretical lectures	1- Conducting theoretical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

		Requirement? • REQUIREMENTS-GATHERING TECHNIQUES • Interviews • Joint Application Development (JAD) • Questionnaires • Document Analysis • Observation • Selecting the Appropriate Requirements-Gathering Techniques • The Analysis Phase Activity • Models and Modeling • Types of Models	Engineering	lectures	Conducting theoretical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
23-27	2	• Events Affecting a Charge Account Processing System • Types of Events • Process Modeling Process Data flow diagramming • Data Flow Diagram Symbols • PDFD Example For a Hospital • Student software engineering projects discussion • Evaluating DFD	Software Engineering	Theoretical lectures	1-Conducting theoretical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

		• Validating the DFD • Consistency Rules • Syntax errors • Typical errors that can occur in a data flow diagram (payroll example) • Logical and Physical Data Flow Diagrams • Moving to The Design • The Design Strategies • Technology and Operation Managements • Case tool (computer Aided S/W Engineeri tool	Engineering	lectures	Conducting theoretical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

15. Course Evaluation

The annual course of 40 is divided into
20 marks for the theoretical exams subject (at least two exams)
10 marks for the theoretical daily exams.
5 marks for the totals of projects and the daily.
5 marks for the totals of daily attendance

16. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Software Engineering
Main references (sources)	Fundamentals Of Software Engineering
Recommended books and references (scientific journals, reports…)	Software Engineering & Testing
Electronic References, Websites	

Course description form

1. Course Name:
Compilers
2. Course Code:
326CsC
3. Semester / Year:
2023/2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours + 60practical hours
7. Course administrator's name (mention all, if more than one name)
Lecturer.:
8. Course Objectives

andpractically and to know what happens during the implementation of the program inside the computer, starting from the source program all the way to an understandable computer program.

A- **Cognitive objectives**
A1- The student should be able to understand the compiler material adequately.
A2- That the student is able to understand the necessary steps to convert any program from the source language into a language understandable to the computer.
A3- The student should distinguish between the six stages of the translator.
A4- For the student to become familiar with the progress made in designing compilers.
A5- - The student should be able to understand the stages in which errors are corrected during the implementation of the program.

B - The skills objectives of the course.
B1 - That the student acquires the ability to correct errors during the implementation of the program through the six stages of the translator.
B2 - That the student acquires the ability to program each stage of the compiler.
B3 - That the student be able to apply the algorithms specific to the work of the translator inside the calculator.
B4- That the student acquires the ability to compile the programming of each stage of the compilerin the form of a single program.

C- Emotional and value goals
C1- The student should appreciate the efforts of scientists in developing compilers and their importance in implementing programs inside the computer.
C2- The student should appreciate the importance of the compilers course as an important course within computer science courses.
C3- To participate in the discussion during the lecture.
C4- The student should take the initiative to solve various extracurricular activities and examples.

9. Teaching and Learning Strategies

Strategy

Teaching and learning methods
1- Lecture method.
2- Question and answer method.
3- Discussion method
4- Laboratory education to acquire practical skills.
5- Assigning the student to some group activities and duties.

Evaluation methods
1- Conducting daily and quarterly theoretical and practical tests.
2- Allocating part of the grade to the student's group reports and assignments.

Transferable general and qualifying skills (other skills related to employability and personal development).
D1- The student must be able to teach the subject.
D2- The student should be able to benefit from the knowledge he has acquired.
D3- The student must be able to use the material in other subjects.
D4- The student must be able to apply the material practically.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1-8	4	Knowledge of definitions , compiler, assembler, linker	definitions , compiler, assembler, linker	Lecture + laboratory	Daily and quarterly exams
		Knowledge of definition of compiler phases and error handler, symbol table manager	definition of compiler phases and error handler, symbol table manager	Lecture + laboratory	Daily and quarterly exams
		Knowledge of construction tools, type of grammar description with example	construction tools, type of grammar description with example	Lecture + laboratory	Daily and quarterly exams
		Knowledge of converting one type to another of grammar description	converting one type to another of grammar description	Lecture + laboratory	Daily and quarterly exams
		Knowledge of Finite state automata FSA, with its structure representation and its	Finite state automata FSA, with its structure representation and	Lecture + laboratory	Daily and quarterly exams
		Knowledge of Sub – phases of lexical analysis: 1- algorithm of converting any transition diagram (T.D) to non-deterministic finite state automata (NDFSA).	Sub -phases of lexical analysis: 1- algorithm of converting any transition diagram (T.D) to non-deterministic finite state automata (NDFSA).	Lecture + laboratory	Daily and quarterly exams
		2- Algorithm of converting NDFSA to DFSA.	2- Algorithm of converting NDFSA to DFSA.	Lecture + laboratory	Daily and quarterly exams
		3 – minimization of DFSA	3 – minimization of DFSA	Lecture + laboratory	Daily and quarterly exams
9-16	4	Knowledge of FSA accepter (recognizer) algorithm .	FSA accepter (recognizer) algorithm .	Lecture + laboratory	Daily and quarterly exams
		Knowledge of AHO algorithm for tokens recognition.	AHO algorithm for tokens recognition.	Lecture + laboratory	Daily and quarterly exams
		Knowledge of Syntax analyzer: - architecture of parsing, grammar derivation (right- most and left – most).	Syntax analyzer: - architecture of parsing, grammar derivation (right-most and left – most).	Lecture + laboratory	Daily and quarterly exams

		Recursion, its types (immediate left recursion and not immediate left recursion), elimination of left recursion.	types (immediate left recursion and not immediate left recursion), elimination of left recursion.	Lecture + laboratory	Daily and quarterly exams
		Knowledge of First and follow algorithm.	First and follow algorithm.	Lecture + laboratory	Daily and quarterly exams
		Knowledge of Top-down parser	Top- down parser	Lecture + laboratory	Daily and quarterly exams
		Knowledge of Bottom up parser (shift reduce parser) with specifying of handle.	Bottom up parser (shift reduce parser) with specifying of handle.	Lecture + laboratory	Daily and quarterly exams
		Reviewing	Reviewing	Lecture + laboratory	Daily and quarterly exams
17-22	4	Knowledge of Operator precedence parser.	Operator precedence parser.	Lecture + laboratory	Daily and quarterly exams
		Knowledge of LR parser	LR parser	Lecture + laboratory	Daily and quarterly exams
		Knowledge of SLR parser	SLR parser	Lecture + laboratory	Daily and quarterly exams
		Knowledge of LALR parser	LALR parser	Lecture + laboratory	Daily and quarterly exams
		Knowledge of syntax directed translation	syntax directed translation	Lecture + laboratory	Daily and quarterly exams
		Knowledge of semantic analyzer : static semantic checks dynamic semantic checks examples	semantic analyzer : static semantic checks dynamic semantic checks examples	Lecture + laboratory	Daily and quarterly exams
		Knowledge of intermediate code generation polish notation (infix, prefix, postfix)	intermediate code generation polish notation (infix, prefix, postfix)	Lecture + laboratory	Daily and quarterly exams

		three address code, quadruples. Converting between one code type to another.	address code, quadruples. Converting between one code type to another.	Lecture + laboratory	Daily and quarterly exams
		Knowledge of code optimizer: introduction , principles of optimization peephole optimization	code optimizer: introduction , principles of optimization peephole optimization	Lecture + laboratory	Daily and quarterly exams
		Knowledge of Optimization of blocks loops in flow graph.	Optimization of blocks loops in flow graph.	Lecture + laboratory	Daily and quarterly exams
		reviewing	reviewing	Lecture + laboratory	Daily and quarterly exams
28-30	4	Knowledge of Code generation: target machine run time storage management, basic blocks and flow graph.	Code generation: target machine run time storage management, basic blocks and flow graph.	Lecture + laboratory	Daily and quarterly exams
		Knowledge of Simple code generator registers allocation and assignment. the dag representation of basic blocks, generating code from dag	Simple code generator registers allocation and assignment. the dag representation of basic blocks, generating code from dag	Lecture + laboratory	Daily and quarterly exams
		Knowledge of global data flow analysis, code improvement transformation	global data flow analysis, code improvement transformation	Lecture + laboratory	Daily and quarterly exams

11. Course Evaluation

Monthly exam ( ) / homework ( ) / Mid-year exam ( ) / final exam ( )

12. Learning and Teaching Resources

1. Compilers principles , techniques , and tools , by Alfred V. Aho, Monica S. Lam , Ravi Sethi , and Jeffrey D.Ullman .
2. Introduction to Compiler Design,by Torben, and Egidius Mogensen.
3. Compiler construction for digital computers , by David Gries.

Course description form

1. Course Name:	
Curricula and teaching methods	
2. Course Code:	
324CsCT	
3. Semester / Year:	
2023/2024	
4. Description Preparation Date:	
3/3/2024	
5. Available Attendance Forms:	
Actual mandatory attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60 hours theoretical	
7. Course administrator's name (mention all, if more than one name)	
Lecturer : Abbas Hadi Abdel Sayed Email: ahadi@uowasit.edu.iq	
8. Course Objectives	
Course Objectives:	First - Cognitive Objectives: •.Learning about the nature of the curriculum, its pillars andelements. • Analytical study of the foundations on which the curriculum isbased and the factors influencing it. • Understanding the role of curriculum elements in the quality ofeducation and studying the relationship between them • The ability to distinguish between types of curricula and evaluatethem • Identify the concept of education and the concept of teaching. • Learn about the teaching profession and its importance to society. • Identify the classifications of teaching methods. • Using specific methods in teaching. • Identify some traditional and modern teaching methods • Knowing how to plan classroom teachingSecond - Skills Objectives: • Implementing micro-teaching within the classroom • Using specific methods in teaching. • Write a precise daily planThird: Value Objectives: • Respect the teaching profession • Interest in using educational methods. • Attention to good planning of teaching
9. Teaching and Learning Strategies	

Strategy	• **Modified lecture.** • **Collective discussion.** •**Brainstorming.** • **Micro-teaching.** • **Cooperative learning**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

	2	curriculum, ancient and modern, and the prevailing curriculum	Curriculum concept	The lecture	questions
		Analyzing the foundations upon which any curriculum is built	Foundations of curriculum construction	Lecture and discussion	Verbal questions
		Comparing curricula that revolve around the subject	Types of interconnected and separate curricula	Interrogation and discussion	Verbal questions
		Comparing student-centered and subject-centered curricula	Types of curriculum activities and units	Brainstorming and discussion	Verbal questions
		Comparing curricula that revolve around the curriculum, the student, and the subject	Types of curricula: Core curriculum	Brainstorming and deductive reasoning	Verbal questions
		First month exam			
		Identifying the basic elements of the curriculum and linking them and the reciprocal relationship between each element and another	Curriculum elements - objectives	Discussion and cooperative learning	Verbal questions
		Identify the role of objectives when building any curriculum, the types of objectives, their fields and specifications	Curriculum elements - objectives	Discussion and lecture	Verbal questions
9-16	2	Identifying the second element of the curriculum, its relationship to the first element, and the foundations of preparing the textbook	Curriculum elements - content	Discussion and lecture	Verbal questions
		Identify the role of teaching methods in presenting academic content in light of the set objectives and specifications of a good method	Curriculum elements - teaching methods	Discussion and lecture	Verbal questions
		Identifying the role and importance of the educational medium in clarifying the academic subject, the conditions for selecting it, and how to prepare it	Curriculum elements - educational methods	Discussion and lecture	Verbal questions
		Identifying the development of educational methods in light of technological innovations and experimenting with the use of some of their types	Technological innovations	Modified lecture	Verbal questions
		Learn about the types of planning in teaching, how to prepare a daily lesson plan, and how to prepare for annual or quarterly planning	Planning in teaching	Discussion	Preparing a plan template
		Second month exam			
		Identifying whether teachingis a profession or a craft, whether it is a science or an art,and classifications of teaching methods	Teaching and its methods	Discussion and lecture	Verbal questions
		Learn about the lecture method, its advantages and disadvantages, and		sixteen	2

17-23	**2**	Learn about the discovery method, its advantages and disadvantages	Discovery method	Microteaching and discussion	Individual application
		Learn about the discussion method and its advantagesand disadvantages	Discussion method	Microteaching and discussion	Individual application
		Identify the advantages and disadvantages of the interrogation method	Interrogation method	Microteaching and discussion	Individual application
		Learn about the cooperative learning method, its advantages and disadvantages	Cooperative learning method	Microteaching and discussion	Individual application
		Identify the method ofsolving problems, its advantages and disadvantages	Problem solving method	Microteaching and discussion	Individual application
		Learn about the brainstorming method, itsadvantages and disadvantages	Brainstorming method	Microteaching and discussion	Individual application
		Learn about the concept mapping method, its advantages and disadvantages	Concept maps	Microteaching and discussion	Individual application
24-27	**2**	Identify the advantages and disadvantages of the extrapolation method	Inductive method	Microteaching and discussion	Individual application
		Identify the deductive method and its advantagesand disadvantages	Deductive method	Microteaching and discussion	Individual application
		Learn about the programmed teaching method, its advantages and disadvantages	Programmed education	Microteaching and discussion	Individual application
		Identify the final element of the curriculum and distinguish between measurement, evaluation, and evaluation	Evaluation in teaching	Discussion and lecture	Verbal questions
28-30	**2**	Learn about classroom	Types of classroom	Cooperativ	Verbal
		Third monthly exam			
		Review the four elements of the curriculum and the impact of each element on the other	General review	discussion	

11. Course Evaluation	
• **Daily tests and preparations, 5 marks** • **Monthly tests 20 marks** • **Class reports of 5 marks** • **Individual application 10 degrees** • **Final exam: 60 marks**	
12. Learning and Teaching Resources	
Required textbooks	**Al-Hasani, Ghazi Khamis (2011): Curricula and methods of teaching mathematics, University of Baghdad.**
Main references (sources)	**Al-Tamimi, Awad Jassim (2006): The school curriculum, its concept and philosophy.**
Recommended supporting books and references (scientific journals, reports...)	**Books on curricula and general teaching methods**
Electronic references,	**Internet sites, and my electronic lectures on YouTube**
13. 13. Course development plan	
Teaching topics related to curriculum development, recent innovations and trends in teaching methods, as well as electronic teaching strategies.	

Course Description Form

1. Course Name:
Practical education
2. Course Code:
430CsPe
3. Semester / Year:
2023-2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
20 weeks in college, 10 practical applications in high schools
7. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name :Assistant teacher Abbas Hadi Abdel Sayed Email: ahadi@uowasit.edu.iq
8. Course Objectives

Course Objectives	**1. Helping the student teacher to identify the components of the school and institutional system and the systemic interaction between these components.** **2. The student teacher or trainee gains a true understanding of his abilities and professional qualities, and works to develop them to the maximum extent possible.** **3. Linking theory and application by putting what the student teacher and trainee learned in the theoretical aspect of the courses he studied in college.** **4. Testing the extent to which the student teacher or trainee is capable of the scientific subject that he is teaching and training in and the extent of his ability to develop it during the education and training process and increase his understanding of the planning subject and his positivity towards it.** **5. Respect the teaching profession and the services related to it, appreciate its workers, and form positive attitudes toward it.** **6. Helping the student teacher to acquire professional competencies that will enable him to perform his duties**

	successfully in the field of personal qualities, training, evaluation, and diversity of activities toward students.

9. Teaching and Learning Strategies

Strategy	1.Imitation and emulation 2.Discussion and dialogue 3.Cooperative learning 4. Problem solving 5.Brainstorming

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	2	1. The student's definition of practical education 2. Introducing the student to watching 3. Introducing the student to public speaking 4. The student's definition of microlearning 5. Identify the types of teaching methods 6. Enable students to apply examples of types of lesson plans 7. Enabling students to recognize the evaluation items	1. Introduction practical educat 2. Watching 3. Diction 4. Microlearnin 5. Types of teaching metho 6. Planning for teaching 7. Evaluation fo	They participate in presentation and discussion They participate in presentation and discussion They participate in presentation and discussion They participate in presentation and discussion They participate in presentation and discussion They participate in presentation and discussion Participation and discussion They participate in presentation and discussion	Discussion and exchange of opinions Discussion and exchange of opinions Discussion and exchange of opinions Discussion and exchange of opinions Discussion and exchange of opinions Discussion and exchange of opinions Participation and discussion They participate in presentation and discussion

9-15	2	Providing a mini-lesson by the students Directing students to schools for the purpose of practical application Directing students to schools for the purpose of practical application Directing students to schools for the purpose of practical application Directing students to schools for the purpose of practical application Directing students to schools for the purpose of practical application Identify the most important problems that students face during the application period			

11. Course Evaluation

- The 100th annual session is divided into
- 40 marks for the practical education subject (evaluated by the subject professor)
- 30 marks evaluated by the educational supervisor during the application period in schools
- 30 marks are evaluated by the scientific supervisor during the practical application period in schools

12. Learning and Teaching Resources

Required textbooks (curricular books, if any	-The book on practical education (observation and application) by Prof. Dr. Daoud Abdel Salam. Naz Badr Khan Sindhi
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Practical education website: How to be a successful implementer

Course Description Form

1. Course Name:
Computer Communication and Networks
2. Course Code:
432CsCn
3. Semester / Year:
2023-2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours and 60 practical hours
7. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name: Asst.prof.Dr Esraa Saleh Alomari Email: ealomari@uowasit.edu.iq Responsible for the practical course Name: Lect. Manar Bashar Murtadha Email: :manar@uowasit.edu.iq
8. Course Objectives

Course Objectives	1- Providing students with the necessary knowledge and skills in the field of information technology and communications. 2- Through this course, students can understand how to build and manage computer networks,

	transfer data, secure communications, and manage network-dependent systems. 3- This course helps students develop skills in dealing with advanced computer networking technologies, qualifying them to work in areas such as network design and development, network support, information security, and web applications.

9. Teaching and Learning Strategies

Strategy	1- Utilizing practical examples 2- Project-based learning 3- Discussions and effective exchange of ideas 4- Using interactive resources and applications 5- Promoting collaboration and teamwork 6- Providing parallel theoretical lessons with practical applications 7- Encouraging self-exploration and continuous learning

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	4	-Transmission Mode a. Serial And Parallel b. Simplex-half and full duplex Modulation : modem , pm fm am ,Multiplexing ,TDM and FDM .	computer communicat and Networks	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects

					4-Daily questions and discussions
9-16	4	-Living In Network - What Is Network - Network Media -LAN, WAN, MAN and Internet Network -Network Protocol - Component Of The Network -Networks Criteria ,Network Topologies, 1 -Transmission Media:guided media , Unguided Media , -OSI model , a. Application , presentation and session b. transport , network data link and physical Different Purposes- Network layer - IPv4	computer communicatio and Networks	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

17-22	4	-Network Devices : Hub, Network Interface Card Repeater bridge Switch Router Gateway - broadcast collision domain , Unicast multicast broadcast, Ethernet , - tcp/ip protocols Addressing The Network Delivery and routing of IP packet, Connection oriented Connection less services Direct and indirect delivery of packets Routing methods Next hop routing, Network specific routing	computer communication and Networks	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
23-27	4	Addressing The Network -IPv4 Address -IPv4 Address For Different Purposes- Network layer - IPv4 ,- Dividing Host Into Groups ,-	computer communication and Networks	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics)

28-30	4	examples- Special Addresses - Assigning Addresses ,Class full , Supernetting. - tcp/ip protocols IPv4 Address -I Address F		Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	3-Using the group system to complete mini projects 4-Daily questions and discussions 1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

11. Course Evaluation

- The annual grade consists of 40 marks, distributed as 10 marks for the practical component and 20 marks for the theoretical component, including 10 marks for project and daily totals.
- The final exam is out of 60 marks.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Computer Networking: A top-down approach

Main references (sources)	Computer Networks
Recommended books and references (scientific journals, reports…)	Network Warrior
Electronic References, Websites	https://www.guru99.com/ar/best-computer-networks-books.html?gpp&gpp_sid

Course Description Form

1. Course Name:
Operating system
2. Course Code:
433CsOs
3. Semester / Year:
2023-2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours and 60 practical hours
7. Course administrator's name (mention all, if more than one name)

Responsible for the theoretical and practical course Name: Lec. zamen abood ramadaan
Email: z.ramadaan@uowasit.edu.iq
Responsible for the practical course Name: programmer Fatima ali
Email: :@uowasit.edu.iq

8. Course Objectives

Course Objectives	**10. Introduction the student to the basics of operating systems and approved algorithms in its application** **11. Components of operating system and its basics.** **12. The security challenges and problems it suffers from.** **13. Practical application of implementing algorithms for operating system.**

9. Teaching and Learning Strategies

Strategy	1- Using practical examples 2- Project-based learning 3- Discussions and effective exchange of ideas 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled by practical applications 7- Encouraging self-exploration a continuous learning

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1-8	4	Introduction to Operating Systems &Operating System – Overview & Why do we need an operating system?& Operating system goals: & What Operating Systems Do &History of Operating Systems	Operating system	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
9-16	4	The following are some of the important functions of an operating system:& Operating Systems Structure & The Operating Systems Services &The System Calls and System Programs	Operating system	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
17-22	4	Types of Operating Systems &Batch operating system &Time-sharing operating systems & Real Time operating System & Distributed operating SystemParallel systems &	Operating system	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions

		Process Management			and discussions
23-27	4	Process State &Process Control Block &Thread & CPU Scheduling &CPU - I/O Burst Cycle & CPU Scheduler & Context Switch & Preemptive Scheduling & Dispatcher & Scheduling Criteria & Scheduling Algorithms	Operating system	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions
28-30	4	First-Come, First-Served Scheduling (FCFS) & Shortest-Job-First Scheduling (SJF) &Priority Scheduling & Round-Robin Scheduling (RR) & R.R (preemptive) & Multilevel Queue Scheduling & Multilevel Feedback Queue Scheduling	Operating system	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions

11. Course Evaluation

- The annual course of 40 is divided into 15 marks for the practical subject and 25 marks for the theoretical subject, including 5 marks for the totals of projects and the daily.
- Final out of 60

12. Learning and Teaching Resources

Required textbooks (curricular boo if any)	
Main references (sources)	Fundamental of operating system
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
educational measurement and evaluation
2. Course Code:
428CsMe
3. Semester / Year:
2023/2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total)(60) / Number of Units (Total)(2)
6. Number of Credit Hours (Total)(60) / Number of Units (Tota 2
7. Course administrator's name (mention all, if more than one nam
Name: Hazem jassim suhaib Email: hazmwe23@jmail.com
8. Course Objectives

Course Objectives	**Preparing teachers capable working i**

9. Teaching and Learning Strategies

Strategy	All learning strategies

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such daily preparation, daily oral, monthly, or written exams, reports .... etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	educational measurement and evaluatic
Main references (sources)	educational measurement and evalu dr.abdel salam jawdt
Recommended books and references (scientific journals, reports…)	educational measurement and evalua
Electronic References, Websites	Magazines and newspapers

Course Description Form

1. Course Name:
Data security
2. Course Code:
431CsSe
3. Semester / Year:
2023−2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours and 60 practical hours
7. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name: Dr Riyadh Rahef Nuiaa Email: riyadh@uowasit.edu.iq Responsible for the practical course Name: BSc. Nooralhuda Lateef Email :nooralhudalateef@gmail.com

8. Course Objectives

Course Objectives	**1- Understand the fundamentals of data protection, encryption, and access control mechanisms.** **2- Explore common cybersecurity threats, vulnerabilities, and attack vectors.** **3- Learn techniques for securing networks, systems, and applications against cyber threats.** **4- Develop skills in incident detection, response, and recovery to mitigate security breaches.** **5- Gain insight into legal, ethical, and regulatory considerations in data security and cybersecurity practices.**

9. Teaching and Learning Strategies

Strategy	1- Using practical examples 2- Project-based learning 3- Discussions and effective exchange of ideas 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled by practical applications 7- Encouraging self-exploration a continuous learning

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluat method

1-8	4	What security is about in general? Information security in past and present, Factor on Computer Crime Information System Security Classification, Classification based on Function.	Data Secu	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducti theoretic and pract tests (dai and quarterly 2- Semin (assignin students t topics) 3-Using t group system to complete mini proj 4-Daily questions and discussio
9-16	4	Type of Attacks Information hiding Sitganography Water marking Encryption Decryption Symmetric and Public Key Systems The Future of Security	Data Secu	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducti theoretic and pract tests (dai and quarterly 2- Semin (assignin students t topics) 3-Using t group system to complete mini proj 4-Daily questions and discussio
17-22	4	Basic Terminology of Cryptography Principles of virus types Historical secret key cryptography Application in High (Junior) School Caesar's cipher Monoalphabetic ciphers, Playfair cipher Transposition or Permutation Diffusion	Data Secu	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducti theoretic and pract tests (dai and quarterly 2- Semin (assignin students t topics) 3-Using t group system to complete mini proj 4-Daily questions

		Confusion			and discussio
23-27	4	Data Encryp Standard DES, Taxonomy of netw security One-time pad ciph Rotor machines, Stream Cipher, Block Cipher Public Algorithms RSA Ethical Hacking Types of Hacking Purpose of Hackir The Phases of Eth Hacking	Data Secu	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conducti theoretic and pract tests (dail and quarterly) 2- Semin (assignin students t topics) 3-Using t group system to complete mini proj 4-Daily questions and discussio
28-30	4	Cybersecurity Importance Cybersecurity Cybersecurity objectives Elements Cybersecurity The Cybersecu Trends Cybersecurity Challenges Cybersecurity Awareness Difference betwee Ethical Hacking a Cyber Security	Data Secu	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning.	1- Conducti theoretica and practi tests (dail and quarterly) 2- Semina (assignin students t topics) 3-Using t group sys to comple mini proj 4-Daily questions and discussio

11. Course Evaluation

- The annual course of 40 is divided into 15 marks for the practical subject and 25 marks for the theoretical subject, including 10 marks for the totals of projects and the daily.

- Final out of 60	
12. Learning and Teaching Resources	
Required textbooks (curricular books any)	CRYPTOGRAPHY AND NETWORK SECURITY PRINCIPLES AND PRACTICE FIFTH EDITION, William Stallings
Main references (sources)	Mark Stamp, Information Security Principles and Practice, John Wiley & Sons, 2006.
Recommended books and references (scientific journals, reports…)	Charles P. Pfleeger and Shari Lawrei Pfleeger, Security in Computing, John Wiley Sons, Inc., 2007.
Electronic References, Websites	

Course Description Form

13.Course Name:
Web Design
14.Course Code:
441CsWd
15.Semester / Year:
2023-2024
16.Description Preparation Date:
3/3/2024
17.Available Attendance Forms:
Actual Mandatory Attendance
18.Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours and 60 practical hours
19.Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name: **M.Sc. Muntadhe Naeem Yasir**

Email: muntadher.naeem@uowasit.edu.iq

20.Course Objectives

Course Objectives	**The objectives of the website design course include several main points:** **1. Understanding the principles of good desig Students learned how to apply good desi principles in creating and developi websites, such as balance, harmony, ease use, and visual appeal.** **2. Learn web design techniques: This includ understanding the basics of web desi techniques such as HTML, CSS, a JavaScript, in addition to various design to such as Bootstrap and WordPress.** **3. Develop programming skills: Lea programming and web development usi programming languages such as PH Python, or Ruby on Rails to add dynam functionality to websites.** **4. Understanding user experience: Studyi how to improve user experience on websit by designing user interfaces that are easy use and attractive.** **5. Dealing with search engine optimizati (SEO) techniques: Understanding how optimize websites to appear better in sear engine results, which increases the sit reach and increases the number of visitors.** **6. Learn about security requirements: Lea how to protect websites from electron attacks and ensure the integrity of the da and information used on the site.** **7. Developing practical projects: Providi students with the opportunity to apply t concepts and skills they have acquir through designing and developing practi projects such as personal websites commercial websites.**

21.Teaching and Learning Strategies

Strategy	**Teaching and learning strategies for web desi can be diverse and comprehensive, including:** **1. Active and interactive learning.** **2. Cooperative learning and teamwork.** **3. Project-based learning and practi applications.** **4. Using technology in learning and teaching.** **5. Provide comprehensive evaluation a constructive feedback.** **6. Benefit from real life lessons and stories.**

	7. Diversify and modify educational metho according to students' needs and curriculu objectives.

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	4	- Website and Web Application - Static and Dynamic Websites - What are the main differences between static and dynamic websites? - Examples of static and dynamic content? - Types of Websites ? - What is a Web Browser? Code (HTML)	Web Design	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1. Conductin theoretical and practi tests (da and quarterly) 2. Seminars (assigning students topics) 3. Using t group system complete mini proje 4. Daily questions and discussion
9-16	4	- What is a database server? - Uses for a database server - How do database servers work? - Database vs. server - Types of database servers - What is an Application Server? - Web page programming options	Web Design	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1. Conductin theoretical and practi tests (da and quarterly) 2. Seminars (assigning students topics) 3. Using t group system complete mini proje 4. Daily questions and discussion

		- Code (HTML+CSS)			
17-22	4	- Web Communication Protocols - What is a TLD? - Publishing Your Web Site (step-by-step) - What is an Application Server? - Web page programming options - Code (HTML+CSS)	Web Design	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1. Conductin theoretical and practi tests (da and quarterly) 2. Seminars (assigning students topics) 3. Using t group system complete mini proje 4. Daily questions and discussion
23-27	4	- Website Prototype: How to Make a Website Prototype? - Website prototype — what is it, and why do you need it? - A prototype looks something like this. - Advantages of website prototyping - What tasks can the development team solve with a website prototype? - How to build a website prototype?	Web Design	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1. Conductin theoretical and practi tests (da and quarterly) 2. Seminars (assigning students topics) 3. Using t group system complete mini proje 4. Daily questions and discussion

		- Top 3 popular ways of prototyping: Paper prototyping - Top 3 popular ways of prototyping: Prototyping with professional apps - Top 3 popular ways of prototyping: Prototyping with online tools - Code (JAVA+MY SQL)			
28-30	4	- What's a website structure? - The 3 most common types of website structures - 5 tips for building a good website structure - Website structure examples to inspire you!? - Code (PHP)	Web Design	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1. Conductin theoretical and practi tests (da and quarterly) 2. Seminars (assigning students topics) 3. Using t group system complete mini proje 4. Daily questions and discussion

5. Course Evaluation

- The annual course of 40 is divided into 20 marks for the practical subject and 20 marks f the theoretical subject, including 10 marks for the totals of projects and the daily.
- Final out of 60

6. Learning and Teaching Resources

Required textbooks (curricular books, if any)	- "HTML and CSS: Design and Bu Websites" by Jon Duckett.

	- “Learning Web Design: A Beginner's Guide HTML, CSS, JavaScript, and Web Graphic by Jennifer Robbins. - “JavaScript and jQuery: Interactive Front-E Web Development” by Jon Duckett. - “Responsive Web Design with HTML5 a CSS3” by Ben Frain. - “Web Design with HTML, CSS, JavaScr and jQuery Set” by Jon Duckett. - “Designing with Web Standards” by Jeffr Zeldman and Ethan Marcotte.
Main references (sources)	- "HTML and CSS: Design and Bu Websites" by Jon Duckett - Covers HTM and CSS concepts in a simplified and detail manner, making it suitable for beginners a advanced users alike. - “JavaScript and jQuery: Interactive Front-E Web Development” by Jon Duckett - prese applications of JavaScript and the jQue library in developing interactive and dynan user interfaces. - “Responsive Web Design with HTML5 a CSS3” by Ben Frain - focuses on responsi web design techniques using HTML5 a CSS3. - “Designing with Web Standards” by Jeffr Zeldman and Ethan Marcotte - revie modern design standards and smart desi techniques to improve the user experience websites. - “Learning Web Design: A Beginner's Guide HTML, CSS, JavaScript, and Web Graphic by Jennifer Robbins - Includes HTML, CS and JavaScript concepts as well as w graphics.
Recommended books and references (scientific journals, reports...)	- “Don't Make Me Think, Revisited: Common Sense Approach to Web Usabilit by Steve Krug - Focuses on user experien and usability in web design. - “Mobile First” by Luke Wroblewski Focuses on designing websites for mobi devices first. - “The Elements of User Experience: Use Centered Design for the Web” by Jesse Jam Garrett - Provides a comprehensive approa to user experience in web design. - “Designing Interfaces: Patterns for Effecti Interaction Design” by Jenifer Tidwell

	presents effective interaction patterns f interface design. - "Web Form Design: Filling in the Blanks" l Luke Wroblewski - Focuses on designi effective website forms and entries. - "Responsive Design Workflow" by Steph Hay - presents an effective working proce for responsive website design. - "The Principles of Beautiful Web Design" l Jason Beaird - focuses on the principles aesthetic website design.
Electronic References, Websites	- Official design techniques websites such MDN Web Do (https://developer.mozilla.org/) a W3Schools (https://www.w3schools.com/) Provide resources, tutorials, a demonstrations on web design techniques. - Other reference books related to graph design, user experience, and front-e development

Course Description Form

1. Course Name:
Internet of Thing
2. Course Code:
442Cslo
3. Semester / Year:
2023-2024
4. Description Preparation Date:
3/3/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 theoretical hours and 60 practical hours
7. Course administrator's name (mention all, if more than one name)
Responsible for the theoretical and practical course Name: Assist.porf. Dr Baraa Ismael Farhan Email: bfarhan@uowasit.edu.iq Responsible for the practical course Name: Lec. Hussein Najm Abd

Email: :hnajim@uowasit.edu.iq

8. Course Objectives

Course Objectives	**1- Introducing the student to the basics of the Internet of Things and the approved protocols for its application** **2- The layers covered by the Internet of Things and the services it provides** **3- The security challenges and problems it suffers from** **4- Practical application of connecting sensors, controller parts, and platforms for the Internet of Things**

9. Teaching and Learning Strategies

Strategy	1- Using practical examples 2- Project-based learning 3- Discussions and effective exchange of ideas 4- Use interactive resources and software applications 5- Enhancing cooperation and teamwork 6- Providing theoretical lessons paralleled by practical applications 7- Encouraging self-exploration and continuc learning

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evalu metho n

1-8	4	Fundamentals of IoT: Introduction, Definitions & Characteristics of IoT, IoT Architectures, Physical & Logical Design of IoT, Enabling Technologies in IoT, History of IoT, About Things in IoT, The Identifiers in IoT, About the Internet in IoT, IoT frameworks, IoT and M2M	Internet of Think	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Condu theoret and pra tests (d and quarter 2- Sem (assign student topics) 3-Usin group system comple mini pr 4-Daily questio and discuss
9-16	4	Sensors Networks : Definition, Types of Sensors, Types of Actuators, Examples and Working, IoT Development Boards: Arduino IDE and Board Types, , RFID Principles and components, Wireless Sensor Networks: History and Context, The node, Connecting nodes, Networking Nodes, WSN and IoT.	Internet of Think	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Condu theoret and pra tests (d and quarter 2- Sem (assign student topics) 3-Usin group system comple mini pr 4-Daily questio and discuss

17-22	4	Wireless Technologies for IoT: WPAN Technologies for IoT: IEEE 802.15.4, Zigbee, HART, NFC, Z-Wave, BLE, Bacnet, Modbus. IP Based Protocols for IoT IPv6, 6LowPAN, RPL, REST, AMPQ, CoAP, MQTT. Edge connectivity and protocols	Internet of Think	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conduc theoret and pra tests (d and quarter 2- Sem (assign student topics) 3-Usin group system comple mini pr 4-Daily questio and discuss
23-27 28-30	4 4	Data Handling& Analytics: Introduction, Bigdata, Types of data, Characteristics of Big data, Data handling Technologies, Flow of data, Data acquisition, Data Storage, Introduction to Hadoop. Introduction to data Analytics, Types of Data analytics, Local Analytics, Cloud analytics and applications	Internet of Think Applications of IoT: Home Automation, Smart Cities, Energy, Retail Management, Logistics, Agriculture, Health and Lifestyle, Industrial IoT, Legal challenges, IoT design Ethics, IoT in Environmental Protection.	Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning	1- Conduc theoret and pra tests (d and quarter 2- Sem (assign student topics) 3-Usin group system comple mini pr 4-Daily questio and discuss 1- Conduc theoreti and pra tests (d and quarter 2- Sem (assigni

					student topics) 3-Using group s to comp mini pr 4-Daily questio and discuss

11. Course Evaluation

- The annual course of 40 is divided into 15 marks for the practical subject and 25 marks for the theoretical subject, including 10 marks for the totals of projects and the daily.
- Final out of 60

12. Learning and Teaching Resources

Required textbooks (curricular books any)	"The Internet of things Connecting "
Main references (sources)	The Internet of things: Key Application and Protocols
Recommended books and references (scientific journals, reports…)	Foundation Elements an IoT Solution
Electronic References, Websites	https://www.techtarget.com