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Academic Program Description Form

University Name: University of Baghdad

Faculty/Institute: College of Education for Women.

Scientific Department: Computer Department ...

Academic or Professional Program Name: Bachelor's

Final Certificate Name: Bachelor's Degree in Computer..........

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

Description Preparation Date: 2024 /11 /1

File Completion Date: 2024 /11/ 10

Signature:

Head of Department Name:

Asmaa abdul-Razzaq

Date: 10/11/2024

Signature:

Scientific Associate Name:

Date: ٢٥/١٥/١٤

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 11 /11 /2024

Signature:

Approval of the Dean

د. اثار شاكر حميد

1. **Program Vision**
The college seeks to graduate female teachers with general and educational qualifications and to create an educational generation capable of building and reforming society in the socially necessary scientific and educational fields. It seeks to prepare female teachers capable of assuming responsibility through various scientific and technical means and methods.

2. **Program Mission**
Preparing female students in line with scientific and technical progress, and preparing qualified cadres who possess specialized and professional competencies, continuous development competencies, and community service competencies to work in the stages of higher education.

3. **Program Objectives**
Graduating female students to teach in middle schools and work in state departments 1- It provides information in computer science to cover what is taught in the middle and middle schools in Iraq. 2- He is provided with information that qualifies him to work in scientific departments, scientific research facilities, and state ministries 3- He is provided with sufficient information that qualifies him to complete his graduate studies. 4- He is provided with information that helps him prepare educational lessons.

4. **Program Accreditation**
Nothing

5. Other external influences
Application for the fourth grade, lasting 45 days, graduation research, seminars, and free report work

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	The first stage: 10 Second stage:11 The third stage: 11 Fourth stage:9	First stage: 47 units The second stage: 52 units The third stage: 50 units Fourth stage: 42 units		Basic course
College Requirements	Exist			
Department Requirements	Exist			
Summer Training	Nothing			
Other	Nothing			

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			Theoretical	practical
First	104CSP	Structured programming	2	2
	106CLD	Logical design	2	2
	108CT	techniques	2	2
	101CM	mathematics	3	

	109CDS	Intermittent structures	**2**	
	107CEP	Educational Psychology	**2**	
	102CPE	Foundations of education	**1**	
	103HR	human rights	**2**	
	105CAL	Arabic Language	**2**	
	110 CTEL	English	**1**	
Second	**211CCT**	Computational theory	**3**	
	213COOP	Entity programming	**2**	
	215CDAS	Data structures	**2**	
	214CNA	Numerical Analysis	**2**	
	217CSA	Systems analysis	**2**	
	212CCA	Calculator architecture	**2**	
	218CASE	Administration and secondary education	**2**	
	216CGP	Developmental psychology	**2**	
	219CTBC	Textbook curriculum	**2**	
	220 C EL	English	**2**	
	221 CPhE	physical education		**1**
	222 CArE	Art education		**1**
	223C CB	Baath Party crimes	**1**	
Third	**324CAI**	Artificial intelligence	**2**	**2**
	326CCG	Fee Calculator	**2**	**2**
	327CGEP	Software engineering	**2**	
	325CCA	Calculator architecture	**2**	
	323CCO	Translators	**2**	**2**
	329CVP	Visual programming	**2**	
	328CTM	Syllabuses, and teaching methods	**2**	
	331 CCPH	Counseling and mental health	**2**	
	332 C EL	English language	**2**	
	333 C DB	Databases	**2**	**2**
Fourth	**434CMM**	multimedia	**2**	**2**
	435COS	operating system	**2**	**2**
	436CSoC	Computer security	**2**	**2**

	437CCNe	computer networks	2	2
	438CIA	Smart applications	2	
	439CME	Measurement and evaluation	2	
	440Cap	Application/practical education		4
	441CRP	research project	2	
	442C EL	English language	2	

8. Expected learning outcomes of the program

Knowledge

1 Provides information in computer science to cover what is taught in the middle and middle schools in Iraq. 2- He is provided with information that qualifies him to work in scientific departments, scientific research facilities, and state ministries.	1- He is provided with sufficient information that qualifies him to complete his graduate studies. 2- He is provided with information that helps him prepare educational lessons.

Skills

Provides information in preparing computer laboratories	Confronting the developments imposed by the world's rapid change in the subject of computers
Providing support and assistance to other college departments	

Ethics

Covering what is taught in the middle and middle schools in Iraq.	Provides information in preparing computer laboratories

Provide him with information to help him prepare educational lessons	

9. Teaching and Learning Strategies

The students worked in groups for the purposes of the seminars in order to encourage the students to engage in self-education, in addition to assigning the students to work on projects through these groups and using the Internet to complete the work.

10. Evaluation methods

Theoretical and practical tests, graduation projects, in addition to reports and seminars

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
1- Prof. Dr. Ayad Abdel Qahar 2- A.P.Dr. Asmaa Abdul Razzaq 3- A.P.Dr. Afaf Badie Qaddo	computer Sciences computer Sciences computer Sciences	Multimedia security Programs Parallel networks and processors			Staff Staff Staff Staff Staff Staff	

4– A.P.Dr. Nashwan Al–Salam Ali	computer Sciences	Data security			Staff	
5– A.P.Dr. Mona Majeed Lafta	computer Sciences	Multimedia security			Staff	
6– A.P.Dr. Rasha Hussein Ali	computer Sciences	Artificial intelligence			Staff	
7– A.P. Amer Abdel Khalaf	Physics Science	Digital image processing			Staff	
8– A.P. Iman Muhammad Jaafar	Engineering computers	Control and computer engineering			Staff	
9– A.P. Enas Muzaffar is beautiful	computer Sciences	Umniah Computers			Staff	
10– A.P. Saba Noori Majeed	Mathematical sciences	Dynamic organization			Staff	
11– T. Dr.. Israa Nafie Mahmoud	computer Sciences	Artificial intelligence			Staff	
12– T. Iman Ismail	computer Sciences	computer Sciences			Staff	
13– T. Maryam Yassin	computer Sciences	Information Technology			Staff	
14– T. Enas Ismail	computer Sciences	Software engineering science			Staff	
15–A.T. Raghad Kazem Abdel Hassan	computer Sciences	Databases			Staff	
16– A.T. Saad Abdel Karim Abdel Amir	computer Sciences	computer Sciences			Staff	
17– A.T. Nebras Amer	computer Sciences	computer Sciences			Staff	
18– A.T. Sawsan Hadi Jadoua	computer Sciences	computer Sciences			staff	

19- A.T. Farah Rafid Salman	computer Sciences	computer Sciences			staff	
20- A.P.Dr. Auhod Hadi	computer Sciences	A.I and Simulation			staff	

Professional Development
Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12.   Acceptance Criterion
(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13.   The most important sources of information about the program
State briefly the sources of information about the program.

14.	Program Development Plan

The department seeks to encourage female students to use the Internet through individual research, graduation projects, and seminars

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 2023-2024															
	104CSP	Structured programming	basic	●				●				●			
	106CLD	Logical design	Basic	●				●				●			
	108CT	techniques	Basic	●				●				●			
	101CM	mathematics	Basic	●				●				●			
	109CDS	Intermittent structures	Basic	●				●				●			
	107CEP	Educational Psychology	Basic	●				●				●			
	102CPE	Foundations of education	Basic	●				●				●			
	103HR	human rights	Basic	●				●				●			
	105CAL	Arabic Language	Basic	●				●				●			
	110 CTEL	English	Basic	●				●				●			
Second	211CCT	Computational theory	basic	●				●				●			

	Code	Subject	Type														
	213COOP	Entity programming	Basic	●			●				●	●				
	215CDAS	Data structures	Basic	●			●				●	●				
	214CNA	Numerical Analysis	Basic	●			●				●	●				
	217CSA	Systems analysis	Basic	●			●				●	●				
	212CCA	Calculator architecture	Basic	●			●				●	●				
	218CASE	Administration and secondary education	Basic													
	216CGP	Developmental psychology	Basic													
	219CTBC	Textbook curriculum	Basic													
	220 C EL	English	Basic	●			●				●	●				
	221 CPhE	physical education	Basic													
	222 CArE	Art education	Basic													
	223C CB	Baath Party crimes	Basic													
Third	324CAI	Artificial intelligence	basic	●			●				●	●				
	326CCG	Fee Calculator	Basic	●			●				●	●				
	327CGEP	Software engineering	Basic	●			●				●	●				
	325CCA	Calculator architecture	Basic	●			●				●	●				
	323CCO	Translators	Basic	●			●				●	●				
	329CVP	Visual programming	Basic	●			●				●	●				
	328CTM	Syllabuses, and teaching methods	Basic	●			●				●	●				

Course

Year	Code	Course Name	Type	1	2	3	4	5	6	7	8	9	10	11	12
	331 CCPH	Counseling and mental health	**Basic**												
	332 C EL	English language	**Basic**												
	333 C DB	Databases	**Basic**												
Fourth	**434CMM**	multimedia	**optional**	●			●			●	●				
	435COS	operating system	**Basic**	●			●			●	●				
	436CSoC	Computer security	**Basic**	●			●			●	●				
	437CCNe	computer networks	**Basic**	●			●			●	●				
	438CIA	Smart applications		●			●			●	●				
	439CME	Measurement and evaluation	**basic**												
	440Cap	Application/practical education	**optional**												
	441CRP	research project	**Basic**												
	442C EL	English language	**Basic**	●			●			●	●				

Description Form

1. Course Name:
Mathematics
2. Course Code:
101CM
3. Semester / Year:
First
4. Description Preparation Date:

2024/11/10		
5.	Available Attendance Forms:	
	Annual	
6.	Number of Credit Hours (Total) / Number of Units (Total)	
	96	
7.	Course administrator's name (mention all, if more than one name)	
	Name: Saba Noori Majeed Email: saba.noori@coeduw.uobaghdad.edu.iq	
8.	Course Objectives	

Course Objectives	1- Solving mathematical equations 2- How to represent equations and solve the using a computer 3- How to represent a mathematical problem and its solution

9.	Teaching and Learning Strategies

Strategy	Teaching mathematics topics with solving many exercises and clarification The practical aspect of this important topic in our lives

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Identify functions	Functions	theoretical	the exam
2	3			theoretical	
3	3	Identify functions	and inequalities		the exam

No		3	Activity	Topic	Type	Exam
4		3			theoretical	
5		3	Identify functions	Functions and inequalities	theoretical	the exam
6		3	Identify goals		theoretical	the exam
7		3		Functions and inequalities	theoretical	
8		3	Identify goals			the exam
9		3			theoretical	
10		3	Recognize continuity	Ending goals		the exam
11		3	Discuss exercises	Unfinished goal	theoretical	the exam
12		3				
13		3	First semester exam	Continuous functions		
14		3				
15		3	Half year holiday		theoretical	the exam
16		3	Identify derivatives	Derivatives of functions	theoretical	the exam
17		3				
18		3	Derivative applications	Function applications	theoretical	the exam
19		3				
20		3	Drawing functions		theoretical	the exam
21		3	Drawing functions	Trigonometric functions	theoretical	the exam
22		3				
23		3	Learn about integrals		theoretical	
24		3		Absolute functi		
25		3	Learn about integrals	Finite integrals	theoretical	the exam
26		3	Discuss exercises	Definite integra	theoretical	the exam
27		3				
28		3	Semester exam	Non-square matrices	theoretical	the exam
29		3				
30		3	Learn about matrices		theoretical	the exam
31		3	Learn about matrices	Square matrices	theoretical	the exam
32		3		Collection of matrices		
			Collection of matrices	Square and proportional	theoretical	the exam
			Matrix multiplication	Square matrices	theoretical	the exam

			Matrix determinants	Invertible matri Cramer's metho	theoretical	the exan
			The inverse of the mystic	Types of	theoretical	the exan
			Cramer's method for solving equations	sequences	theoretical	the exan
				Types of sequences	theoretical	the exan
			Identify sequences			the exan
			Identify sequences Types of sequences	Sequences and their importanc	theoretical	the exan the exan
					theoretical	the exan
			Numerical series Numerical sequences Geometric series Geometric series Discuss exercises Semester exam	Numerical serie Numerical serie Geometric serie Geometric serie	theoretical theoretical theoretical theoretical	the exan

11.	Course Evaluation
50 semester grades + 50 final exam grades = 100 college grades	

12.	Learning and Teaching Resources
Required textbooks (curricular books, if any)	1-Calculus – James Stewart 2-Engineering Mathematics – K. A. Stroud – Second Edition 3- Calculus – Howard Anton – Sixth Edition

	4- "Mathematics for computer science", Eric Lehman , F.Thomson Leighton , Albert R. Meyer,2017 5- اساسيات التفاضل والتكامل وتطبيقاتهت, أ.نادية برقلي,2010, دار الكتب الوطنية,بنغازي ,ليبيا .
Main references (sources)	1-Calculus – James Stewart 2-Engineering Mathematics – K. A. Stroud – Second Edition 3- Calculus – Howard Anton – Sixth Edition 4- "Mathematics for computer science", Eric Lehman , F.Thomson Leighton , Albert R. Meyer,2017 5- اساسيات التفاضل والتكامل وتطبيقاتهت, أ.نادية برقلي,2010, دار الكتب الوطنية,بنغازي ,ليبيا .
Recommended books and references (scientific journals, reports…)	1-Calculus – James Stewart 2-Engineering Mathematics – K. A. Stroud – Second Edition 3- Calculus – Howard Anton – Sixth Edition 4- "Mathematics for computer science", Eric Lehman , F.Thomson Leighton , Albert R. Meyer,2017

	5- اساسيات التفاضل والتكامل وتطبيقاتهت, أ.نادية برقلي,2010, دار الكتب الوطنية,بنغازي ,ليبيا .
Electronic References, Websites	YouTube, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons, files uploaded to the electronic classroom, and presentation uploaded to the electronic classroom, in addition to electronic interactive lessons.

Course Description Form

2. Course Name:
Logic Design
3.   Course Code:
106 CLD
4.   Semester / Year:
2nd
5.   Description Preparation Date:
2024/11/10
6.   Available Attendance Forms:
Annual
7.   Number of Credit Hours (Total) / Number of Units (Total)
160
8.   Course administrator's name (mention all, if more than one name)
Name: Amer Abed Khalaf

Email: amerallehiebe@coeduw.uobaghdad.edu.iq

9. Course Objectives

Course Objectives	

10. Teaching and Learning Strategies

Strategy	Studying logic gates used in computer and applications

11. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	**Numerical system**	Numerical systems definitio	Theoretical	Exams
2	4	**Numerical systems**	Numerical systems Transforms	Teoretical	Exams
3	4		**Numerical systems Transforms**	Theoretical	Exams
4	4	**Numerical systems Transforms**	Arithmatic operations definition		
5	4	Arithmatic operations	Arithmatic operations definition	Theoretical	exams
6	4	Arithmatic operations	Boolean algebra definition	Theoretical	exams
7	4	Boolean algebra	Boolean algebra definition		exams
8	4	Boolean algebra	Boolean algebra definition	Theoretical and Experimental	exams
9	4	Boolean algebra	Boolean algebra definition		exams
10	4	Boolean algebra		Theoretical and Experimental	exams

11	4	First Exam	Solution using Karnaugh map	Theoretical and Experimental	
12	4	Karnaugh Map	Solution using Karnaugh map	Theoretical and Experimental	exams
13	4	Karnaugh Map	Solution using Karnaugh map	Experimental	exams
14	4	Karnaugh Map	Half and Full adders design		exams
		Half and Full adders			exams
15	4		Half and Full adders design	Theoretical	
16	4	Half and Full adders	BCD to Excess-3 convertor		exams
	4	BCD to Excess-3		Theoretical	exams
17			Binary to grey convertor	Theoretical	exams
	4	Binary to grey			
18		1 s and 2 s complements	Design 1 s and 2 s complements logic circuit		exams
	4			Theoretical and experimental	exams
19			Parallel adder design		
	4	Parallel adder			
20		Second exam		Theoretical and Exprimental	
	4				
21		Flip-flops	Flip-flops design	Theoretical Experimental	exams
	4		Asynchronous RS flip-flop design	Theoretical and experimental	
22		Asynchronous RS flip-flop	Synchronous RS flip-flop Design	Theoretical and Experimental	exams
	4				exams
23		Synchronous RS flip-flop			

	4		D-flip flop Deign		exams
24	4	Flip flop D (Delay)	JK flip flop design	Theoretical and Experimental	
25	4	Flip-flop JK	T flip flop design		exams
26	4	T flip flop(toggle)	Encoder and decoder design	Theoretical and Experimental	exams
	4	Encoder and Decoder		Theoretical and Experimental	exams
	4		Multiplexer Design	Theoretical and Experimental	exams
27	4	Multiplexers		Theoretical and Experimental	exams
	4	Third exam	ROM design	Theoretical and Experimental	exams
28	4	Read only memory ROM	Counters types	Theoretical and Experimental	exams
29	4	Counters	Registors types	Theoretical and Experimental	
	4	Registors		Theoretical and Experimental	exams
30				Theoretical and Experimental	
				Theoretical and Experimental	

31				Theoretical and Experimental
32				Theoretical and Experimental
				Theoretical and Experimental

12. Course Evaluation

Annual endeavor score = 30 theoretical exams + 5 reports + 15 practical exams
Final grade = 50 endeavors + 50 end-of-year exam grades (40 notebooks + 10 practical)
Final grade = 100

13. Learning and Teaching Resources

مالفوين, الالكترونيك الرقمي مبادئ وتطبيقات د.سامي سرحان د.زياد القاض التصميم المنطقي ودوائر الكمبيوتر أ.صهيب عبدالجبار د.قيس إسماعيل ملزمة تصميم الاكترونيك الرقمي Digital design principles and practices John F. Wakerly	
The same previous sources	
YouTube, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons, files uploaded to	

the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons.	

Course Description Form

3. **Course Name:**
Discrete Structure
4. **Course Code:**
109CDS
5. **Semester / Year:**
First stage 2023-2024
6. **Description Preparation Date:**
2023/10/12
7. **Available Attendance Forms:**
Whole year
8. **Number of Credit Hours (Total) / Number of Units (Total)**
96
9. **Course administrator's name (mention all, if more than one name)**
Asmaa Abd Allrazaq   **Email: asmaa.72@coeduw.uobaghdad.edu.iq**
10. **Course Objectives**

Course Objectives	• **Introducing students to the principles of basic discrete structures, such as mathematical log relationships, and algebra of functions.** • **Encouraging students to use mathematical logic in representing and solving complex problems** • **Students' ability to recognize logical functions**

| | | | • Learn about algebra of functions | | |
| | | | • Identify logical relationships | | |

11. Teaching and Learning Strategies

| Strategy | |

12. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Learn about the topics mentioned and solve the exercises	Mathematical induction	Theoretical	tests
2	3	Learn about the topics mentioned and solve the exercises	Mathematical logic introduction Simple logical expressions	Theoretical	tests
3	3	Learn about the topics mentioned and solve the exercises	Variables used in declarative sentences Complex logical expressions	Theoretical	tests
4	3	Learn about the topics mentioned and solve the exercises	Logical issues Logical equivalence The statement of attainment and the statement of contradiction	Theoretical	tests

5	3	Learn about the topics mentioned and solve the exercises	Logical requirement Algebra of issues	Theoretical	tests
6	3	Learn about the topics mentioned and solve the exercises	Conditional expressions and contradiction Maswarat Logical reasoning	Theoretical	tests
7	3	Learn about the topics mentioned and solve the exercises	Set theory introduction Ways to express groups Basic concepts in groups	Theoretical	tests
8	3	Learn about the topics mentioned and solve the exercises	Venn diagrams 5- Sets of numbers 6- Algebra of groups 7- The family of collections and the family of indexed collections	Theoretical	tests
9	3	Learn about the topics mentioned and solve the exercises	exam	Theoretical	tests

10	3	Learn about the topics mentioned and solve the exercises	Ordered pairs and multiplying sets Boolean algebra	Theoretical	tests
11	3	Learn about the topics mentioned and solve the exercises	relations introduction Bilateral relations Relationship statement Ways to write elements of a relationship statement The starting point and scope of the relationship	Theoretical	tests
12	3	Learn about the topics mentioned and solve the exercises	Self-relationships and inverse relationships Installing relationships Types of relationships Equivalence relations	Theoretical	tests
13	3	Learn about the topics mentioned	- Functions introduction	Theoretical	tests

		and solve the exercises	Definitions and basic concepts in functions Examples of functions Composite function		
14	**3**	**Learn about the topics mentioned and solve the exercises**	**exam**	**Theoretical**	tests
15	**3**	**Learn about the topics mentioned and solve the exercises**	**- Algebra of functions 6- Discussing functions through arrow representation 7- Draw a function diagram**	**Theoretical**	tests
16	**3**	**Learn about the topics mentioned and solve the exercises**	**Ordered pairs and multiplying sets Boolean algebra**	**Theoretical**	tests
17	**3**	**Learn about the topics mentioned and solve the exercises**	**Vectors and matrices introduction Vectors Matrices**	**Theoretical**	tests

18	3	Learn about the topics mentioned and solve the exercises	Models of the square matrix Algebraic operations in matrices Determinants Thumbnails and cofactors	Theoretical	tests
19	3	Learn about the topics mentioned and solve the exercises	Find the inverse of a square matrix Solve linear equations using matrix inverse Cramer's method	Theoretical	tests
20	3	Learn about the topics mentioned and solve the exercises	Half year holiday	Theoretical	tests
21	3	Learn about the topics mentioned and solve the exercises	Charts introduction Basic concepts Types of charts	Theoretical	tests
22	3	Learn about the topics mentioned and solve the exercises	Definitions Examples of charts Diagrams and relationships Charts and matrices	Theoretical	tests

			Algorithm for finding the shortest path between two points		
23	3	Learn about the topics mentioned and solve the exercises	Cliques	Theoretical	tests
24	3	Learn about the topics mentioned and solve the exercises	exam	Theoretical	tests
25	3	Learn about the topics mentioned and solve the exercises	Conjugates	Theoretical	tests
26	3	Learn about the topics mentioned and solve the exercises	Ordinary subgroup	Theoretical	tests
27	3	Learn about the topics mentioned and solve the exercises	division group Symmetry and conformation	Theoretical	tests

28	3	Learn about the topics mentioned and solve the exercises	Episodes	Theoretical	tests
29	3	Learn about the topics mentioned and solve the exercises	exam	Theoretical	tests
30	3	Learn about the topics mentioned and solve the exercises	review	Theoretical	tests

13. 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

14. Learning and Teaching Resources	
Required textbook (curricular books, any)	1) Intermittent Structures, Jassim Tohme Sarsouh, College of Science, University of Basra, 1992. 2) Discrete Mathematical Structures With Application To Computer Science, J. P. Tremblay & R. Manohar, 2nd , McGraw-Hill Book company, 1988. 3) Discrete Mathematical Structures For Computer Science, K.Bernard & Robert C., prentice-Hall Inc. 1984
Main reference (sources)	Same as above
Recommended books and references (scientific	The sources mentioned above are sufficient

journals, reports...)		
Electronic Reference Websites	YouTube, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons.	

Course Description Form

4.	Course Name:	
	Computer Techniques	
5.	Course Code:	
	108CT	
6.	Semester / Year:	
7.		
	First	
7.	Description Preparation Date:	
	2024/11/20	
8.	Available Attendance Forms:	
	Annual	
9.	Number of Credit Hours (Total) / Number of Units (Total)	
	128	
10.	Course administrator's name (mention all, if more than one name)	
	Name: Dr. Auhood Hadi Jabbar Email: auhood.h@coeduw.uobaghdad.edu.iq	
11. Course Objectives		
Course Objectives	•	• The student learns the physical parts of the computer and the function of each part of the Computer and also basic knowledge of computer software. • Learn how to use the Windows operating system and some software. • Provide the general information about the Intel family of microprocessors

12. Teaching and Learning Strategies

Strategy	
	• Teaching with many exercises and clarifications the physical parts of the computer and their definition and function by using a board and the projector,which enables the lecture to convey the information to the student in an interesting and Effective way. • Learning strategy can be strengthen her desire towards computers and their use. • Qualifying the student to teach this subject in secondary and high schools.

13. Course Structure

Week	Hours	Name of the unit	Learning method	Evaluation method
1.	4	Definition Computer	Theoretical & Practical	Exams: Daily and monthly exams, discussions reports.
2.	4	History of Computers & Computer Generations	Theoretical & Practical	Exams: Daily and monthly exams, discussions and reports.
3.	4	Parts of computers	Theoretical & Practical	Daily and monthly exams, discussions and reports.
4.	4	Computer Architecture -Processor Architecture	Theoretical & Practical	Exams: Daily and monthly exams, discussions and reports.:
5.	4	Computer Hardware Units/ Input and outputs devices	Theoretical & Practical	Daily and monthly exams, discussions and reports.
6.	4	Busses	Theoretical & Practical	Exams:
7.	4	Registers	Theoretical & Practical	Daily and monthly exams, discussions and reports.
8.	4	ALU	Theoretical & Practical	Exams:
9.	4	Control Unit	Theoretical & Practical	Daily and monthly exams, discussions and reports.
10.	4	Types of Memory - RAM	Theoretical & Practical	Exams:
11.	4	Types of Memory -ROM	Theoretical & Practical	Daily and monthly exams, discussions and reports.

			Theoretical & Practical	Exams:
12.	4	Flash Memory Virtual Memory	Theoretical & Practical	Exams:
13.	4	Cache Memory Output (Display , Printer)	Theoretical & Practical	Daily and monthly exams, discussions and reports.
14.	4	Programming Language Machine Language	Theoretical & Practical	Exams: Daily and monthly exams, discussions and reports.
15.	4	Interpreter& Compiler	Theoretical & Practical	Daily and monthly exams, discussions and reports.
16.	4	High level Language overview	Theoretical & Practical	Exams: Daily and monthly exams, discussions and reports.
17.	4	Assembly Language High level Language	Theoretical & Practical	Daily and monthly exams, discussions and reports.
18.	4	Software Model of the 8088/8086 MP	Theoretical & Practical	Doing simple projects
19.	4	8088/8086 Registers	Theoretical & Practical	Daily and monthly exams, discussions and reports.
20.	4	General purpose Register	Theoretical & Practical	Exams: Daily and monthly exams, discussions and reports.
21.	4	Status (Flags) Register:	Theoretical & Practical	Daily and monthly exams, discussions and reports.
22.	4	IA overview	Theoretical & Practical	Discussions and reports.
23.	4	IA Applications	Theoretical & Practical	Discussions and reports.
24.	4	Windows overview	Theoretical & Practical	Discussions and reports.
25.	4	Word overview	Theoretical & Practical	Discussions and reports.
26.	4	Excel overview	Theoretical & Practical	Discussions and reports.
27.	4	POWER POINT overview	Theoretical & Practical	Discussions and reports.
28.	4	POWER POINT overview	Theoretical & Practical	Discussions and reports.
29.	4	Scratch Program	Theoretical & Practical	Discussions and reports.
30.	4	Scratch Program	Theoretical & Practical	Test &Doing simple projects
31.	4	Scratch Program	Theoretical & Practical	Test &Doing simple projects

11. Course Evaluation

Theoretical & Practical exams

15.   Learning and Teaching Resources

Required textbooks (curricular books, if any)	Computer in your future, faffenberger, Bryan, New Jersey, 2003 .
Main references (sources)	1-Computer Organization, First Edition – 2015, by Prof K.Vikram

	2-Fundamentals of Computer Organization and Architecture, by Mostafa Abd-El-Barr and Hesham El-Rewini, Wiley 2005
Recommended books and references (scientific journals, reports...)	The references above
Electronic References, Websites	YouTube, Google Classroom, Power Point Lectures, Interactive online lessons http://www.ee.ryerson.ca/~courses/coe608/

Course Description Form

5. Course Name: **Structured programming**	
6. Course Code: 104CSP **104CSP**	
8. Semester / Year: **2025-2024**	
8. Description Preparation Date: **2024/11/10**	
9. Available Attendance Forms: **Annual**	
10. Number of Credit Hours (Total) / Number of Units (Total) : **128**	
11. Course administrator's name (mention all, if more than one name) **Name: Ass.Prof. Dr. Rashs Hussain Ali**	
12. Course Objectives	

Course Objectives	1- How to program using the C++ language 2- Solving problems according to specific algorithms

13.   Teaching and Learning Strategies

Strategy	Teaching structured programming using C++ programming language with many exercises and clarifications.

14.   Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	definition of programming language, rules for writing a program,	Introduction to C++	Theoretical & practical	the exams
2	4	variables and constants		Theoretical & practical	the exams
3	4	Input and output statements and arithmetic substitution statements	Write Simple C++ Program	Theoretical and practical	the exams
4	4	Mathematical functions	Solving Homework	Theoretical and practical	the exams
5	4	Comparison operations, logical operations, and operations on bits	Solving Homework	Theoretical and practical	the exams
6	4	Selection statements	Solving Homework	Theoretical and practical	the exams
7	4	Single and nested if statements	If Statements	Theoretical and practical	the exams
8	4	Applications in an if statement	Application on if statement	Theoretical and practical	the exams
9	4	Switch statement	Switch Statement	Theoretical and practical	the exams
10	4	The while statement	While statement	Theoretical and practical	the exams
11	4	The do while statement	do while Statements	Theoretical and practical	the exams

12	4	Break and continue Statements	Break and continue Statements	Theoretical and practical	the exams
13	4	The for loop statement	For loop Statements	Theoretical and practical	the exams
14	4	Applications in repetition sentences	Solving Problems	Theoretical and practical	the exams
15	4	Nested repetition sentences	Solving Problems	Theoretical and practical	the exams
16	4	Applications in nested repetition sentences	Solving Problems	Theoretical and practical	the exams
17	4	unary arrays	Declaration and Creation, Using Array Solving problems	Theoretical and practical	the exams
18	4	Applications to the unary matrix	Declaration and Creation, Using 2d-Arrays. Solving problems	Theoretical and practical	the exams
19	4	Two-dimensional arrays		Theoretical and practical	the exams
20	4	Applications to two-dimensional matr	Declaration and Creation, Using Multi d -Arrays. Solving problems	Theoretical and practical	the exams the exams
21	4	Multidimensional arrays		Theoretical and practical	the exams
22	4	Applications in multidimensional arra	Declaring and accessing function Solving problems	Theoretical and practical	the exams the exams the exams the exams the exams
23	4	Functions of the first type		Theoretical and practical	
24	4	Applications	Functions of the seco type	Theoretical and practical	the exams the exams
25	4	Functions of the second type Applications	Applications Literal strings	Theoretical and practical	the exams the exams

26	4	Literal strings	Applications in string literals	Theoretical and practical	the exams
27	4	Applications in string literals	Structure data type	Theoretical and practical	the exams
28	4	Structure data type	Array of structure	Theoretical and practical	
29	4	Array of structure	Applications in structure	Theoretical and practical	
30	4	Applications in structure			
31	4	Pointers in c++	Pointers in c++		
32	4	Application on pointers	Application on pointe		

14.	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.

16.	Learning and Teaching Resources

1- Teach Yourself C++ in 21 Days , Laura Lemay Charles L.

   Perkins.

2- Head First C++" by Kathy Sierra and Bert Bates

3- C++: A Beginner's Guide" by Herbert Schildt

Course Description Form

6. Course Name: English Language

7.	Course Code: 110 CTEL

9.	Semester / Year: First year
	Description Preparation Date: **2024/11/10**
9.	

10.	Available Attendance Forms: face to face
11.	Number of Credit Hours (Total) / Number of Units (Total)(30 hours)

12.	Course administrator's name (mention all, if more than one name)
	Name: Israa Amer
	Email: Israa.a@coeduw.uobaghdad.edu.iq

13.	Course Objectives
Course Objectives	Develop the linguistic competence that enables them to aware of the cultural, economic and social issues of th society in order to contribute in giving solution. to enable learner to communicate effectively and appropriately in r life situation.

14.	Teaching and Learning Strategies
Strategy	1. Brain storming 2. Encourage Critical thinking 3. Encourage analytical thinking strategy 4. Introduce correct research methodologies

15.	Course Structure

Week	Hours	Unit or subject name
1	**1**	Unit 1- Hello
2	**1**	Unit 2- Your World
3	**1**	Unit 3- All about You
4	**1**	Unit 4- Family and Friends

5	1	Unit 5- The way I live
6	1	Unit 6- Everyday
7	1	Unit 7- My Favorite
8	1	Unit 8- Where I live
9	1	Unit 9- Times Past
10	1	Unit 10- We had a great time!
11	1	Unit 11- I can do that!
12	1	Unit 12- Please and thank you
13	1	Unit 13- Here and now
14	1	Unit 14- It's time to go!
15	1	Review
16	1	Exam
17	1	Expression of obligation using have(to/should/must
18	1	Medical terms: a cold/the flu/food poisoning/a temperature /a Prescription
19	1	Using of take/get/do/make verbs in specific contex
20	1	Adverbs: Celluly/Carvoli/Jost/-- Steel/Toe
21	1	!Express exclamation: He was so scares !He's such an idiot The difference between writing formal and infor letters
22	1	Verbs used with certain nouns: tell a story/ kee promise
23	1	Warnings: Cape of Tea Grass/Out of Order
24	1	Exam
25	1	Vocabulary about the most common customs in the world such as chewing gums How to write a review for a book or a movie
26	1	Present perfect continuous and present perfect simp
27	1	Conditions : Mainly / Possible / Exactly
28	1	Past Perfect Tense

29	**1**	Review
30	**1**	Exam
26	**1**	Unit 1- Hello
27	**1**	Unit 2- Your World
28	**1**	Unit 3- All about You
29	**1**	Unit 4- Family and Friends
30	**1**	Unit 5- The way I live

15. Course Evaluation
17.   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

Learning and Teaching Resources	
Required textbooks (curricular books, if any)	*New Headway Plus* (Beginner Student's Book) by John and Lz Soars, Oxford University Press.
Main references (sources)	قاموس أكسفورد
Recommended books and references (scientific journals, reports…)	الكتب المنشورة ضمن نفس سلسلة *Headway* والمجلات التعليمية الخاصة باللغة الانكليزية
Electronic References, Websites	www.newheadwayplus.london:oxforduniversitypress

2. Course Name:

Computational Theory	
3. Course Code:	
CCT211	
4. Semester / Year:	
Yearly	
5. Description Preparation Date:	
19‑01‑2025	
6. Available Attendance Forms:	
2 hour per week	
7. Number of Credit Hours (Total) / Number of Units (Total)	
96	
8. Course administrator's name (mention all, if more than one name)	
Name: Israa Nafea Mahmood. Email: israa.n@coeduw.uobaghdad.edu.iq	

9. Course Objectives

Course Objectives	• The aim of this course is to teach the principles of computational theory that lead to learn the foundations of compilers course

10.   Teaching and Learning Strategies

Strategy	

11. Course Structure

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

1	2	Identify the mentioned groups and theories and solve problems	solving equations	Lecture	Written test, and daily participation
2	2	Graphs and Trees	solving equations	Lecture	Written test, and daily participation
3	2	Finite Automata (Deterministic)	solving equations	Lecture	Written test, and daily participation
4	2	Finite Automata (Non Deterministic)	solving equations	Lecture	Written test, and daily participation
5	2	Regular Expressions	solving equations	Lecture	Written test, and daily participation
6	2	Transition Graphs	solving equations	Lecture	Written test, and daily participation

7	2	Equivalent of DFA's, and NFA's	solving equations	Lecture	Written test, and daily participation
8	2	Kleene's Theorem	solving equations	Lecture	Written test, and daily participation
9	2	Kleene's Theorem	solving equations	Lecture	Written test, and daily participation
10	2	Kleene's Theorem	solving equations	Lecture	Written test, and daily participation
11	2	Exam	Exam	Lecture	Written test, and daily participation
12	2	Finite Automata with Output	solving equations	Lecture	Written test, and daily participation
13	2	Finite Automata with Output	solving equations	Lecture	Written test, and daily participation
14	2	Regular Languages	solving equations	Lecture	Written test, and daily participation
15	2	Regular Languages	solving equations	Lecture	Written test, and daily participation
16	2	Midterm break	Midterm break	Midterm break	Midterm break

17	2	Decidability	solving equations	Lecture	Written test, and daily participation
18	2	Context free Grammars	solving equations	Lecture	Written test, and daily participation
19	2	Context free Grammars	solving equations	Lecture	Written test, and daily participation
20	2	Representing of Arithmetic Expressions	solving equations	Lecture	Written test, and daily participation
21	2	Context Sensitive Grammars	solving equations	Lecture	Written test, and daily participation
22	2	Regular Grammars	solving equations	Lecture	Written test, and daily participation
23	2	Regular Grammars	solving equations	Lecture	Written test, and daily participation
24	2	Derivation trees	solving equations	Lecture	Written test, and daily participation
25	2	Greibach Normal Form	solving equations	Lecture	Written test, and daily participation
26	2	Chomsky Normal Form	solving equations	Lecture	Written test, and daily participation
27	2	Chomsky Normal Form	solving equations	Lecture	Written test, and daily participation
28	2	Push Down Automata	solving equations	Lecture	Written test, and daily participation

29	2	Turing Machine	solving equations	Lecture	Written test, and daily participation
30	2	Complexity Theory	solving equations	Lecture	Written test, and daily participation
31	2	Exam	Exam	Lecture	Written test, and daily participation
32	2	Review	solving equations	Lecture	Written test, and daily participation

16.	Course Evaluation

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

18.	Learning and Teaching Resources

Required textbooks (curricular books, if any)	Introduction to Theory of Computation Anil Maheshwari Michiel Smid School of Computer Science Carleton University Ottawa Canada April 17, 2019
Main references (sources)	Same as above
Recommended books and references (scientific journals, reports…)	INTRODUCTION TO COMPUTER THEORY (Daniel I. Cohen)
Electronic References, Websites	Youtube videos, interactive Power point Lectures on google class.

Course Description Form

7. Course Name:
Numerical Analysis

8. Course Code:
214 CNA

10. Semester / Year:
2nd

10. Description Preparation Date:
2024/11/10

11. Available Attendance Forms:
Annual

12. Number of Credit Hours (Total) / Number of Units (Total)
160

13. Course administrator's name (mention all, if more than one name)
Name: Saba Noori Majeed Email: saba.noori@coeduw.uobaghdad.edu.iq

14. Course Objectives

Course Objectives	Studding Numer[...] methods and using ma[...] program

15. Teaching and Learning Strategies

Strategy	Applying numerical methods using computer programs

16. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Protection fr numerical errors	Sources of errors, definitions and ty of errors (Chapter One)	Theoretical	
2	4	Issues and ideals	Bulk sorter	applied	the exams
3	4	Issues and ideals	Absolute error and relative error of b sorter	Theoretical	
4	4	Issues and ideals		applied	the exams
5	4	Solutions of linear	Solving nonlinear equations (Chap Two) using drawing	Theoretical	
6	4	nonlinear algebr		applied	the exams
7	4	equations	Bisection method	Theoretical	
8	4	Solutions of linear ar nonlinear algebraic	False location method	applied	the exams
9	4	equations	Iterative fixed point method Newton-Raphson method	Theoretical applied	the exams
10	4	Solutions of linear ar			
11	4	nonlinear algebraic	System of linear equations and matri (Chapter Three)	Theoretical	the exams
12	4	equations		applied	
13	4	Linear and non-linea algebraic equations	Solving a system of linear equati using the Chaos-Newton progress	Theoretical applied	the exams
14	4	before	method	Theoretical	
15	4	Solve innovative line	Solving a system of linear equati	applied	
16	4	equations	using the Chaos-Newton backfl	Theoretical	
17		Solve innovative line	method	applied	
18	4	equations	Solve linear equations using the Cha Gordon method	Theoretical applied	the exams
19	4	Solve innovative line equations	Solve linear equations using the Jac method	Theoretical applied	the exams
20	4	Solve innovative line			
21	4	equations	Solve linear equations using the Ka Seidel method	Theoretical applied	the exams
22	4	Problem solving and examples	First semester exam for the acaden year	Theoretical applied	the exams
23	4				
24	4				the exams
25	4	Problem solving and examples	Half year holiday		
26	4	Introduction to numerical interpolat	Theoretical		
27	4	Problem solving and	and inclusion (Chapter Four)	applied	
28	4	examples			

45

29	4	Problem solving and examples	Inclusion and interpolation Lacra... method	Theoretical applied	the exam...
30	4	Problem solving and examples	Table of differences and progress... and backward effects	Theoretical applied	the exam...
31	4		Newton's progressive method - ... retrograde by complementation	Theoretical applied	the exam...
32	4	Chapter V			
	4	Problem solving and examples	Newton's method for relat... differences by complementation	Theoretical applied	the exam...
			Numerical derivation using progressive and backward differe... table	Theoretical applied	the exam...
		Problem solving and examples		Theoretical	
			Numerical derivation using the met... of central differences and fir... progressive differences	applied Theoretical applied	the exam... the exam...
		Problem solving and examples	Trapezoidal method of numeri... integration	Theoretical applied	the exam...
		Problem solving and examples	Simpson 3/1 and Simpson 8/3 meth... for numerical integration	Theoretical applied	the exam...
			Introduction to algebraically solv... ordinary differen... equations/separable differen... equations	Theoretical applied Theoretical applied	the exam...
		Problem solving and examples		Theoretical applied	the exam...
		Problem solving and examples	Solving differential equations using Taylor series method	Theoretical applied	the exam...
		Problem solving and examples	Solving differential equations us... Euler's method	Theoretical applied	the exam...
			Solving differential equations using Renca-Kutta method	Theoretical applied	the exam...
					the exam...

17.	Course Evaluation

Annual endeavor score = 30 theoretical exams + 5 reports + 15 practical exams
Final grade = 50 endeavors + 50 end-of-year exam grades (40 notebooks + 10 practical)
Final grade = 100

19. Learning and Teaching Resources	
1- Thomas G.calculas and analytic geometry (2010) 2- Mathew J.h(1999) numerical method using matlab prentice hall **.** **3-** Applied numerical method with matlab (steven c.chapra) 2008. 4- Applied numerical method with matlab (laurene v.gausett (2010) **1990** (مجيد حسن المهندس الدكتور) التطبيقي والعددي الهندسي التحليل−5	
The same previous sources	
YouTube, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons.	

Course Description Form

8. Course Name: Data Structure
9. Course Code: 215 CDAS
11. Semester / Year: Second Year
Description Preparation Date: **2024/11/10**
11.
12. Available Attendance Forms: year
13. Number of Credit Hours (Total) / Number of Units (Total) 160
14. Course administrator's name (mention all, if more than one name)
Name: Instructor. Iman Ismaeel Hamid Email: iman.hamid@coeduw.uobaghdad.edu.iq
15. Course Objectives

| Course Objectives | Qualifier students with the importance of data to obtain the information through the control of the distribution of data and to identify the nature and construction of main memory in a particular format, and build and retrieval of data from strong programs and the empowerment of programmed innovative ways of creativity in the writing of programs and short lead times, storage and retrieval of data from memory |

16. Teaching and Learning Strategies

| Strategy | | In-person teaching in classroom and scientific laboratories |

17. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Learn data structures	Introduction ,Benefits ,Types of data structure. How to select the suitable data structure.	Theoretical and practical (lab.)	test
2	4	Learn arrays	Representation element in one and two dimensional array.	Theoretical and practical (lab.)	test
3	4	Programs of arrays in c++	Representation element in array w structures .	Theoretical and practical (lab.)	test
4	4	Programs of stack algorithms in c++	Stack: definition, operations, and algorithms	Theoretical and practical (lab.)	test
5	4	stack record implementation	Array representation of stack record	Theoretical and practical (lab.)	test

			implementation of stack		
6	4	Queue: definition, operations, a algorithms	Queue: definition, operations, and algorithms	Theoretical and practical (lab.)	test
7	4	Array representation	Array representati of Queue	Theoretical and practical (lab.)	test
8	4	Programs of queue algorithms in c++	record implementation Queue	Theoretical and practical (lab.)	test
9	4	Circular queue: definition, operations, a algorithms	Circular queue: definition, operations, and algorithms	Theoretical and practical (lab.)	test
10	4	Array representation of Circular Queue	Array representati of Circular Queue	Theoretical and practical (lab.)	test
11		Programs of circular queue algorithms in c	record implementation Circular Queue	Theoretical and practical (lab.)	test
12		Linked structures: sequential & dynar Storage Allocation	Linked structures: sequential & dynamic Storage Allocation	Theoretical and practical (lab.)	test
13		Linked list: definition, operations, a algorithms	Linked list: definition, operations, and algorithms	Theoretical and practical (lab.)	test
14		Linked Stack & Queue. Double linked list	Linked Stack & Queue. Double linked list	Theoretical and practical (lab.)	test
15		Programs of linked list algorithms in c++	Half – Year Break	Theoretical and practical (lab.)	test

				Theoretical and practical (lab.)	test
16		Directed and undirected graph	Graph: -Directed graph - Undirected graph	Theoretical and practical (lab.)	test
17		Half – Year Break		Theoretical and practical (lab.)	test
18		Half – Year Break		Theoretical and practical (lab.)	test
19		trees	Types of trees.	Theoretical and practical (lab.)	test
20		trees	Tree traversing.		
21		trees	Tree representation: - General tree Binary tree	Theoretical and practical (lab.)	test
22		Trees	tree transformations.	Theoretical and practical (lab.)	test
23		binary tree	Representation of arithmetic expression using binary tree.	Theoretical and practical (lab.)	test
24		Binary search tree	Binary search tree.	Theoretical and practical (lab.)	test
25		Sorting algorithms	Sorting algorithms selection, bubble, insertion, and quic sort.	Theoretical and practical (lab.)	test
26		Searching algorithms	Searching algorithms: sequential & bina search.	Theoretical and practical (lab.)	test

				Theoretical and practical (lab.)	test
27		Programs of sorting algorithms in c++	Different examp & programs for data structure.	Theoretical and practical (lab.)	test
28		Programs of searching algorithms in c++	Review	Theoretical and practical (lab.)	test
29		Review	review	Theoretical and practical (lab.)	test
30		Review	review	Theoretical and practical (lab.)	test
31		Review	review	Theoretical and practical (lab.)	test
32		Review	review	Theoretical and practical (lab.)	test
	4				

18. 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

20. Learning and Teaching Resources

Required textbooks (curricular books, if any)	- Issam Alsafar, Data structure, alsafeer, 2001. 2- Lectures of Data Structures With C++, by Lecturer. 3- Lectures of Data Structures from internet . 4- Data Structures Using C and C++ (2nd Edition) 2nd Edit
Main references (sources)	The same resources
Recommended books and references (scientific journals, reports…)	The same resources
Electronic Refere nces, Websites	The same resources

1. Course Name:	
Computer Architecture	
2. Course Code:	
212 CCA	
3. Semester / Year:	
Second stage	
4. Description Preparation Date:	
2024/11/10	
5. Available Attendance Forms:	
Manual	
6. Number of Credit Hours (Total) / Number of Units (Total)	
128	
7. Course administrator's name (mention all, if more than one name)	
Name: Raghad Kadum Abd –Al Hassan Email: raghad.k@coeduw.uobaghdad.edu.iq	

8. Course Objectives

Course Objectives	Installation of the micro program and its relationship with the addition of the calculator
	And others, learn programming in the General Corporation for the 8086 processor

9. Teaching and Learning Strategies

Strategy	Lecture, exam, discussion, use of PowerPoint and the Internet

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Emulator 8086 Learning	**Bus system(address, data, control)**	Theoretical and practical	Achievement tests
2	4	Emulator 8086 Learning	**Bus cycle**		Achievement tests
3	4	Emulator 8086 Learning	**Fetch and execute**	Theoretical and practical	Achievement tests
4	4	Emulator 8086 Learning	**Memory organization**	Theoretical and practical	Achievement tests
5	4	Emulator 8086 Learning	**Addressing modes**	Theoretical and practical	Achievement tests
6	4		**Exam**	Theoretical and practical	Achievement tests
7	4	Emulator 8086 Learning	**Addressing modes**		Achievement tests
8	4	Programming Introduction	**8086 software model**	Theoretical and practical	Achievement tests
9	4	Programming Introduction	**General & special purpose registers**	Theoretical and practical	Achievement tests
10	4	Programming Introduction	**Transfer instructions**	Theoretical and practical	Achievement tests
11	4	Program executing	**Arithmetic instructions**	Theoretical and practical	Achievement tests
12	4	Program executing	**Arithmetic instructions**		Achievement tests
13	4	Program executing	**Logical instructions**	Theoretical and practical	Achievement tests
14	4	Program executing	**Shift & rotate Instructions**	Theoretical and practical	Achievement tests
15	4		**Exam**	Theoretical and practical	Achievement tests
16	4		عطلة نصف السنة		Achievement tests
17	4		عطلة نصف السنة		Achievement tests

18	4	Program executing	**Flag register instructions**	Theoretical and practical	Achievement tests
19	4	Program executing	**Control transfer**	Theoretical and practical	Achievement tests
20	4	Program executing	**Unconditional and Conditional jump Instructions**	Theoretical and practical	Achievement tests
21	4	Program executing	**Programming Examples**		Achievement tests
22	4	Program executing	**Stack principles**	Theoretical and practical	Achievement tests
23	4	Program executing	**Stack instructions**	Theoretical and practical	Achievement tests
24	4	Program executing	**Programming Examples**	Theoretical and practical	Achievement tests
25	4		**Exam**	Theoretical and practical	Achievement tests
26	4	Program executing	**Principles of interrupt**		Achievement tests
27	4	Program executing	**Interrupt instructions**	Theoretical and practical	Achievement tests
28	4	Program executing	**I/O port instructions**	Theoretical and practical	Achievement tests
29	4	Program executing	**Memory H/w Organization**	Theoretical and practical	Achievement tests
30	4		**Exam**	Theoretical and practical	Achievement tests
31	4	Program executing	**Reports discussion**	Theoretical and practical	Achievement tests
32	4	Emulator 8086 Learning	**Introduction**	Theoretical and practical	Achievement tests

11. Course Evaluation

Class activities (10 marks), extracurricular activities (10 marks), exams (20 marks), attendance at lectures (10 marks), final exam (50 marks)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	**The 8086 Microprocessors Architecture, software and interfacing techniques** **By:** *Walter A. Triebel* **-The 8086/8088 MPU, Architecture,**

	programming and interfacing **BY: _Barry B. Brey_**
Main references (sources)	**Ammeter program**
Recommended books and references (scientific journals, reports…)	**The 8086 Microprocessors Architecture,** **software and interfacing techniques** **By: _Walter A. Triebel_** **-The 8086/8088 MPU, Architecture,** **programming and interfacing** **BY: _Barry B. Brey_**
Electronic References, Websites	**YouTube, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons.**

Course Description Form

9. Course Name:
System Analysis and Database
10.   Course Code:
217CSA
12.   Semester / Year:
2nd
12.   Description Preparation Date:
2024/11/10
13.   Available Attendance Forms:
Annual

14.	Number of Credit Hours (Total) / Number of Units (Total)				
	128				

15.	Course administrator's name (mention all, if more than one name)
	Name: Enas Muzaffer Jamel
	Email: enasm.j@coeduw.uobaghdad.edu.iq

16.	Course Objectives	
Course Objectives		Learn the students • The principle of system analysis and design. • The concept of database systems. • How can manage and design database systems

17.	Teaching and Learning Strategies
Strategy	-Theoretical lectures and practical apply. - E-learning (e-classroom): video recordings, electronic assignments and reports.

18. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Introduction to System Analysis and Design- Access 2007:explain interfaces &elements	Introduction to System Analysis and Design- Access 2007:explain interfaces &elements	Theoretical and practical	the exams
2	4	The life cycle of the system Software	The life cycle of the system: analysis and design	Theoretical and practical	the exams
3	4	The life cycle of the system Software	**coding, testing, implementation and Maintenance**	Theoretical and practical	the exams
4	4	DFD , ERD	**System Design and Modelling**	Theoretical and practical	the exams
5	4	Represent data by (ER Model)- -Create table (relation), Properties of the attributes &control data fields(attributes)	**Data Modeling :** **Entity- Relationship Model (ER Model) , Relationships-Create table (relation), Properties of the attributes &control data fields(attributes)**	Theoretical and practical	the exams
6	4	Converting ER models to relational database- Creating the relationship with its type (one to one- one to many- many to many)	**Converting ER models to relational database- Creating the relationship with its type (one to one- one to many-many to many)**	Theoretical and practical	the exams
7	4	Enhanced Entity Relationship Model (EER Model)	**Enhanced Entity Relationship Model (EER Model)**	Theoretical and practical	the exams
8	4	Exam	**Exam**	Theoretical	the exams

				and practical	
9	4	Types of Keys and apply-Creating the queries, Queries and criteria	Keys Fields - Creating the queries, Queries and criteria	Theoretical and practical	the exams
10	4	File System & Database System	Introduction to Databases and File system, Purpose of database system	Theoretical and practical	the exams
11	4	DBMS	DBMS	Theoretical and practical	the exams
12	4	Database System Concepts: Schema and Instance, Data abstraction, Data Independence- Forms: control add a picture or object	Database System Concepts: Schema and Instance, Data abstraction, Data Independence- Forms: control add a picture or object	Theoretical and practical	the exams
13	4	Data Model	Data Model	Theoretical and practical	the exams
14	4	An overview to relational databases : properties attributes, tuple, and domains - Report: creating ,modifying	An overview to relational databases : properties attributes, tuple, and domains- Report: creating ,modifying	Theoretical and practical	the exams
15	4	Integrity Rules and Constraints-Apply Macro	Integrity Rules and Constraints- Apply Macro	Theoretical and practical	the exams
16	4	Exam	Exam	Theoretical and practical	the exams
17	4	Half year holiday			
18	4	An overview to normalization and problems of redundancy	An overview to normalization and problems of redundancy	Theoretical and practical	the exams
19	4	Functional dependencies	Functional dependencies	Theoretical and practical	the exams
20	4	Convert the un normalization table to normalization table	The three normalization forms 1nf,2nf,3nf	Theoretical and practical	the exams
21	4	The applying the three normalization forms	The applying the three normalization forms	Theoretical and practical	the exams
22	4	The properties of the ACID - Test	The properties of the ACID - Test	Theoretical and practical	the exams
23	4	SQL in access 2007: explain interface & elements, SQL view	Structured Query Language (SQL): DDL, DML,DCL	Theoretical and practical	the exams
24	4		Exam	Theoretical and practical	the exams
25	4	Implementation of SQL	Creating tables and inserting records	Theoretical and practical	the exams
26	4	Implementation of SQL	Deleting, copy and updating records	Theoretical	the exams

					and practical	
27	4	**Implementation of SQL**	**Retrieving records(the select statement- order)**	Theoretical and practical	the exams
28	4	**Implementation of SQL**	**Filtering retrieved records (where clause)**	Theoretical and practical	the exams
29	4	**Implementation of SQL**	**SQL NULL Values, Comparison Operators**	Theoretical and practical	the exams
30	4	**Implementation of SQL**	**SQL Functions, GROUP BY , SQL HAVING CLAUSE**	Theoretical and practical	the exams
31	4	**Implementation of SQL**	**DDL, SQL Sub Queries**	Theoretical and practical	the exams
32	4		**Exam**	Theoretical and practical	the exams

19.   Course Evaluation

Annual endeavor score = 30 theoretical exams +5 assignments + 15 practical (10 practical exams +5 reports)
Final grade = 50 Annual endeavor score + 50 end-of-year exam grades (40 notebooks + 10 practical)
Final grade = 100

21.   Learning and Teaching Resources

Required textbooks (curricular books, if any)	Introduction to DataBase System, C.J.,2000
Main references (sources)	1- Howard Gould," Systems Analysis and Design", 1st Ed. ebooks at bookboon.com, 2016. 2- Ramez Elmasri and Shamkant B. Navathe, " Fundamentals of Database Systems", 6th Ed., Addison – Wesley, 2011. 3- SQL for Microsoft access, CeceliaL.
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	YouTube, files uploaded to the electronic classroom, and presentations uploaded the electronic classroom, in addition to electronic interactive lessons, files uploaded the electronic classroom, and presentations uploaded to the electronic classroom addition to electronic interactive lessons.

Course Description Form

10.	Course Name:
Object Oriented Programming	
11.	Course Code:
213 COOP	
13.	Semester / Year:
Second	
13.	Description Preparation Date:
2024/11/10	
14.	Available Attendance Forms:
Annual	
15.	Number of Credit Hours (Total) / Number of Units (Total)
128	
16.	Course administrator's name (mention all, if more than one name)
Name: Assist. Prof. Rasha H.Ali Email: rashaha2003@coeduw.uobaghdad.edu.iq	
17.	Course Objectives

Course Objectives	1– **How to program using the Ja** **language** 2– **Solving problems according t** **specific algorithms** 3– **How to use the capabilities** **object–oriented programming**

18.	Teaching and Learning Strategies
Strategy	Teaching object-oriented programming (OOP) concepts using Java programming language w many exercises and clarifications. The (OOP) is important in problem-solving.

19.	Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	History of Java , The Java Programm ,Language, Running Programs in Java	Introduction to JAV	Theoretical and practical	the exams
2	4	The Java Platform , Java Program Executi Types of Java Programs, Writing Sim Application	Write Simple Java Program	Theoretical and practical	the exams
3	4			Theoretical and practical	the exams
4	4	Writing Simple Applet, Data Types, Fi Variables	Solving Homework		the exams
5	4	Binary Arithmetic Operators, Unary Arithme ,Operators, Relational and Conditio Operators	Solving Homework	Theoretical and practical	the exams
6	4				
7	4			Theoretical and practical	the exams
8	4				
9	4	Print Statement	Print Statement	Theoretical and practical	the exams
10	4				
11	4	Shift and Logical Operators,	If and for Stateme	Theoretical and practical	
12	4				
13	4	Shortcut Assignment Operators if/else Statements, The switch Statement	Switch Statement While and do wl Statements	Theoretical and practical	
14	4			Theoretical and practical	the exams
15	4	The while and do-while Statements	Break and conti Statements		
16	4			Theoretical and practical	the exams
17		The for Statement, The break Statement	Break and conti Statements	Theoretical and practical	the exams
18	4	The continue Statement	Break and conti Statements	Theoretical and practical	the exams
19	4	Solving Problems	Solving Problems	Theoretical and practical	the exams
20	4	Declaring Classes	Solving Problems	Theoretical and practical	the exams
21	4	Member Variables and Methods	Solving Problems	Theoretical and practical	
22	4	Class Constructors	Solving Problems	Theoretical and practical	the exams
	4	Creating Objects, Declaring a Variable to re to an Object	Solving Problems	Theoretical and practical	the exams

23	4	عطلة نصف السنة		Theoretical and practical	the exams
24	4	Instantiating a Class, Initializing an Obj Using Objects, Referencing an Obje Variable,	Instantiating a Cla Initializing an Obj	Theoretical	the exams
25	4		Using Obje Referencing Object's Variable,	and practical Theoretical and practical	the exams
26	4	Using Constructers		Theoretical and practical	the exams
27	4	Calling an Object's Methods, Cleaning Unused Objects, The Garbage Collec Finalization	Application Theoretical Text	Theoretical and practical	the exams
28	4			Theoretical and practical	
29	4	Using Methods, Static Methods, Argum Promotion and Casting	Application Theoretical Text	and practical Theoretical and practical	
30	4	Scope of Declaration Method, Overloading	Application Theoretical Text	Theoretical and practical	
31	4			Theoretical and practical	
32		Declaration and Creation, Using Arrays, Enhanced for statement	Declaration Creation, Us Arrays, The Enhan for statement Application the Theoretical Text	and practical Theoretical and practical Theoretical and practical	
		Declaration and Creation, Using Arrays, Enhanced for statement Application the Theoretical Text	Application the Theoretical Text	Theoretical and practical Theoretical and practical	
		Passing Arrays to Methods, Multidimensic Arrays	Passing Arrays Methods, Multidimensional Arrays Application the Theoretical Text		
		Application the Theoretical Text	Application the Theoretical Text		
		Variable-Length Argument List			

			Application the Theoretical Text		
		this Reference	Application the Theoretical Text		
		Composition, Enumeration	Application the Theoretical Text		
		Superclass and Subclass	Application the Theoretical Text		
		Constructors and Finalizers in Subclasses	Application the Theoretical Text		

20.	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.

22.	Learning and Teaching Resources

2- Teach Yourself JAVA in 21 Days , Laura Lemay Charles L. Perkins. 2- Head First Java" by Kathy Sierra and Bert Bates 3-Java: A Beginner's Guide" by Herbert Schildt	
1- Java Concurrency in Practice" by Brian Goetz et al. 2- Java: The Complete Reference" by Herbert Schildt 3- Clean Code: A Handbook of Agile Software Craftsmanshi by Robert C. Martin 4- Java Performance: The Definitive Guide" by Scott Oaks	
YouTube, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons.	

Course Description Form

11.	Course Name: English language	
12.	Course Code:	
220 CEL		
14.	Semester / Year:2025-2024	
Description Preparation Date: **2024/11/10**		
14.		
15.	Available Attendance Forms: attendance the whole year	
16.	Number of Credit Hours (Total) / Number of Units (Total) 12 hours\2 units	
17.	Course administrator's name (mention all, if more than one name)	
	Name: Asst.prof . Hanan Abbas Hussein Email: hanan.abbas@coeduo.uobaghdad.edu.iq	
18.	Course Objectives	

Course Objectives	• **Developing students' ability to speak English.** • **Understanding reading passages and knowing their meaning.** • **Developing the possibility of drafting sentences in English.**

19.	Teaching and Learning Strategies

Strategy	Use the book Headway of Pre-Intermediate Student's Book Using electronic explanation by creating Google classroom for students if necessary

20. Course Structure

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

1	1	Chapter one	Getting to know you	Theoretical	Testing
2	1	Chapter two	The way to live	Theoretical	Testing
3	1	Chapter three	It all went wrong	Theoretical	Testing
4	1		Let's go shopping!	Theoretical	Testing
5	1	Chapter four	What do you want to do	Theoretical	Testing
6	1	Chapter five	Tell me! What's it like?	Theoretical	Testing
7	1	Chapter six	Fame	Theoretical	Testing
8	1	Chapter seven	Getting to know you	Theoretical	Testing
9	1	Chapter eight	If Clauses	Theoretical	Testing
10	1	Chapter nine	Passive voice	Theoretical	Testing
11	1	Chapter ten	expressions	Theoretical	Testing
12	1	Chapter eleven	Conversation	Theoretical	Testing

21. Course Evaluation Theoretical Tests

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

23. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Headway of Pre-Intermediate Student's Book
Main references (sources)	The same source which mentioned above.
Recommended books and references (scientific journals, reports…)	\
Electronic References, Websites	YouTube and files descending on the electronic classroom and presentations descend on the electronic classroom as well as online interactive lessons

12. Course Name:

Computational Theory					
13. Course Code:					
CCT211					
14. Semester / Year:					
Yearly					
15. Description Preparation Date:					
19‒01‒2025					
16. Available Attendance Forms:					
2 hour per week					
17. Number of Credit Hours (Total) / Number of Units (Total)					
96					

18. Course administrator's name (mention all, if more than one name)					
Name: Israa Nafea Mahmood. Email: israa.n@coeduw.uobaghdad.edu.iq					

19. Course Objectives					
Course Objectives	• The aim of this course is to teach the principles of computational theory that lead to learn the foundations of compilers course				

20. Teaching and Learning Strategies					
Strategy					

21. Course Structure

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

1		2	Identify the mentioned groups and theories and solve problems	solving equations	Lecture	Written test, and daily participation
2		2	Graphs and Trees	solving equations	Lecture	Written test, and daily participation
3		2	Finite Automata (Deterministic)	solving equations	Lecture	Written test, and daily participation
4		2	Finite Automata (Non Deterministic)	solving equations	Lecture	Written test, and daily participation
5		2	Regular Expressions	solving equations	Lecture	Written test, and daily participation
6		2	Transition Graphs	solving equations	Lecture	Written test, and daily participation

7	2	Equivalent of DFA's, and NFA's	solving equations	Lecture	Written test, and daily participation
8	2	Kleene's Theorem	solving equations	Lecture	Written test, and daily participation
9	2	Kleene's Theorem	solving equations	Lecture	Written test, and daily participation
10	2	Kleene's Theorem	solving equations	Lecture	Written test, and daily participation
11	2	Exam	Exam	Lecture	Written test, and daily participation
12	2	Finite Automata with Output	solving equations	Lecture	Written test, and daily participation
13	2	Finite Automata with Output	solving equations	Lecture	Written test, and daily participation
14	2	Regular Languages	solving equations	Lecture	Written test, and daily participation
15	2	Regular Languages	solving equations	Lecture	Written test, and daily participation
16	2	Midterm break	Midterm break	Midterm break	Midterm break

17	2	Decidability	solving equations	Lecture	Written test, and daily participation
18	2	Context free Grammars	solving equations	Lecture	Written test, and daily participation
19	2	Context free Grammars	solving equations	Lecture	Written test, and daily participation
20	2	Representing of Arithmetic Expressions	solving equations	Lecture	Written test, and daily participation
21	2	Context Sensitive Grammars	solving equations	Lecture	Written test, and daily participation
22	2	Regular Grammars	solving equations	Lecture	Written test, and daily participation
23	2	Regular Grammars	solving equations	Lecture	Written test, and daily participation
24	2	Derivation trees	solving equations	Lecture	Written test, and daily participation
25	2	Greibach Normal Form	solving equations	Lecture	Written test, and daily participation
26	2	Chomsky Normal Form	solving equations	Lecture	Written test, and daily participation
27	2	Chomsky Normal Form	solving equations	Lecture	Written test, and daily participation
28	2	Push Down Automata	solving equations	Lecture	Written test, and daily participation

29	2	Turing Machine	solving equations	Lecture	Written test, and daily participation	
30	2	Complexity Theory	solving equations	Lecture	Written test, and daily participation	
31	2	Exam	Exam	Lecture	Written test, and daily participation	
32	2	Review	solving equations	Lecture	Written test, and daily participation	

22. Course Evaluation

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

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Introduction to Theory of Computation Anil Maheshwari Michiel Smid School of Computer Science Carleton University Ottawa Canada April 17, 2019
Main references (sources)	Same as above
Recommended books and references (scientific journals, reports…)	INTRODUCTION TO COMPUTER THEORY (Daniel I. Cohen)
Electronic References, Websites	Youtube videos, interactive Power point Lectures on google class.

Course Description Form

12.	Course Name: **Computer Graphics**
13.	Course Code: **326 CCG**
15.	Semester / Year: Third
Description Preparation Date: **2024/11/10**	
15.	
16.	Available Attendance Forms: **Annual**
17.	Number of Credit Hours (Total) / Number of Units (Total)
128	
18.	Course administrator's name (mention all, if more than one name)
Name: Asst. Prof. Dr. Afaf Badie Jamil Email: afafkaddo@coeduw.uobaghdad.edu.iq	
19.	Course Objectives

Course Objectives	**Defining computer graphics and Processing drawn images as a means of improving the clear presentation of the information generated by the computer to the student.** **Cognitive objectives :** **A: How to draw with a computer using specific algorithms** **B: Image processing using computer** **The skills objectives of the course: Image processing** **Emotional and value goals:** **Urging students to use image processing and drawing using computer.**

20.	Teaching and Learning Strategies

Strategy	**Books, lieutenants and practical application**

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
21. Course Structure					
1	4	Introduction to Computer Graphics	- Introduction to Computer Graphics.	Theoretical and practical	tests
2	4	Drawing Elementary Figure.	Drawing programs. -Plotting Point.	Theoretical and practical	tests
3	4	Bresenham`s Algorithm	Bresenham`s Algorithm. And ready instructions	Theoretical and practical	tests
4	4	General Bresenham`s Algorithm.	General Bresenham`s Algorithm.	Theoretical and practical	tests
5	4	Circle Drawing. Circle General	Circle Drawing. And ready instructions.	Theoretical and practical	tests
6	4	Circle General Bresenham`s Algorithm	Circle General Bresenham`s Algorithm	Theoretical and practical	tests
7	4	Circle Drawing by Using Circle Equation	Circle General	Theoretical and practical	tests

			Bresenham`s Algorithm		
8	4	Two Dimensional Geometric Transformations	Circle Drawing by Using Circle Equation	Theoretical and practical	tests
9	4	Rotation. Scaling	Translation. And ready instructions.	Theoretical and practical	tests
10	4	Reflection. Shearing	Translation. And ready instructions.	Theoretical and practical	tests
11	4	Matrix Representation of Transformations4	Rotation.	Theoretical and practical	tests
12		**TESTS**			
13	4	Rotation, Scaling	Scaling	Theoretical and practical	tests
14	4	Reflection. Shearing.	Reflection.	Theoretical and practical	tests
15	4	Two Dimensional Viewing Transaction	Shearing.	Theoretical and practical	tests
16	4	Clipping. Rectangular Clipping	Ready instructions to different shapes	Theoretical and practical	tests
17		**EXAM**			
18		**Half-year Break**			
19	4	Line Clipping. - Simple Visibility	Ready instructions and making	Theoretical and practical	tests

			project practical.		
20	4	Find Intersection Points. Midpoint Subdivision	Ready instructions and making project practical.	Theoretical and practical	tests
21	4	Polygon Clipping Algorithm.	Ready instructions and making project practical.	Theoretical and practical	tests
22	4	Aspect Rotation. Graphics Primitive	Ready instructions and making project practical	Theoretical and practical	tests
23	4	Normalization Device Coordinates	Ready instructions and making project practical.	Theoretical and practical	tests
24	4	Three Dimensional Transformations	Ready instructions and making project practical.	Theoretical and practical	tests
25	4	Rotation. Scaling.	Ready instructions and making project practical.	Theoretical and practical	tests

26	4	3D Models	3D Models.	Theoretical and practical	tests
27	4	3D Modeling.	3D Models.	Theoretical and practical	tests
28	4	3D Modeling Operations.	3D Modeling Operations	Theoretical and practical	tests
29	4	Usage of 3D Modeling	3D Modeling Operations	Theoretical and practical	tests
30	4	3D Models Features	3D Modeling Operations	Theoretical and practical	tests
31	4	The Process of 3D Modeling	Applications in 3D models.	Theoretical and practical	tests
32	4	3D Models Creating Method	Applications in 3D models.	Theoretical and practical	tests

23. 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

25. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- J.D Foley & A. Dametal , "Introduction to Computer Graphic", Addison-Wesly,1993. 2- D. Hearn & M.P. Baker," Computer Graphics ", 2nd Ed., Prentice-Hall, 1994. 3- I. Viola, J. Rigau & M. Sbert, "Introduction theory tools for Computer graphics", Morgan & Cbypool publishers, 2009.

	4- B.E. Johnson," 3D Modeling and Animation ",design, images& text copyrights©1976-2012. اساسيات الرسم بالحاسوب, للاستاذ الدكتور نضال العبادي, الطبعة الاولى , 2018 -5
Main references (sources)	The same mentioned above
Recommended books and references (scientific journals, reports…)	The same mentioned above
Electronic References, Websites	YouTube, files uploaded to the electronic classroom, presentations uploaded to the electronic classroom, in addition to electronic interactive lessons.

Course Description Form

13.   Course Name:
Computer Architecture
14.   Course Code:
325 CCA
16.   Semester / Year:
Annual
Description Preparation Date: **2024/11/10**
16.
17.   Available Attendance Forms: In Person lectures
18.   Number of Credit Hours (Total) / Number of Units (Total)
2 hour weekly / 64 Unit (30 hours)
19.   Course administrator's name (mention all, if more than one name)
Name: Nibras Amer Mohammed Ali

			Email: Nebras.Ali@Coeduw.Uobaghdad.Edu.Iq		

20.   Course Objectives

Course Objectives	• **Study of computer architecture** • **Understand basic concepts and principles** • **To design and develop computer systems**

21.   Teaching and Learning Strategies

Strategy	Books, manuals and educational videos

22.   Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Classification of Computer architecture; Von Neumann Machines	Classification of Computer architecture; Von Neumann Machines	Theoretical	Tests
2	2	Memory system architecture	Memory system architecture	Theoretical	Tests
3	2	Memory device characteristics	Memory device characteristics	Theoretical	Tests
4	2	RAM unit components	RAM unit components	Theoretical	Tests
5	2	RAM organization	RAM organization	Theoretical	Tests
6	2	Semiconductors RAM s	Semiconductors RAM s	Theoretical	Tests
7	2	RAM design	RAM design	Theoretical	Tests
8	2	Cache design	Cache design	Theoretical	Tests
9	2	Principles of locality of reference	Principles of locality of reference	Theoretical	Tests
10	2	Structure of cache memory	Structure of cache memory	Theoretical	Tests
11	2	Basic operation of cache	Basic operation of cache	Theoretical	Tests

12	2	Performance of cache	Performance of cache	Theoretical	Tests
13	2	Mapping function	Mapping function	Theoretical	Tests
14	2	Examples; Replacement algorithms	Examples; Replacement algorithms	Theoretical	Tests
15	2	Write Policies		Theoretical	Tests
16	2	Half year holiday	**Half year holiday**		
17	2	Virtual Memory; Translation look aside buffer	Virtual Memory; Translation look aside buffer	Theoretical	Tests
18	2	Page replacement Policies	Page replacement Policies	Theoretical	Tests
19	2	Segmentation technique; Segmentation with Paging	Segmentation technique; Segmentation with Paging	Theoretical	Tests
20	2	Input Output System;1- Programmed IO. 2- Direct Memory Access	Input Output System;1- Programmed IO. 2- Direct Memory Access	Theoretical	Tests
21	2	DMA controller; Types of DMA; DMA transfer	DMA controller; Types of DMA; DMA transfer	Theoretical	Tests
22	2	CPU structure; Register organization	CPU structure; Register organization	Theoretical	Tests
23	2	Control Unit; Hardwired CU; Micro programmed CU	Control Unit; Hardwired CU; Micro programmed CU	Theoretical	Tests
24	2	Von Neumann Machine Cycle	Von Neumann Machine Cycle	Theoretical	Tests
25	2	Central Processing Unit; Single bus Organization; Multi Bus Organization	Central Processing Unit; Single bus Organization; Multi Bus Organization	Theoretical	Tests
26	2	Execution of a complete Instruction; Examples	Execution of a complete Instruction; Examples	Theoretical	Tests
27	2	Branching	Branching	Theoretical	Tests

28	2	Types of Microinstructions; Horizontal microinstructions; Vertical microinstructions	Types of Microinstructions; Horizontal microinstructions; Vertical microinstructions	Theoretical	Tests
29	2	Pipelining; Cycle time of Pipelining Process; Pipeline latency	Pipelining; Cycle time of Pipelining Process; Pipeline latency	Theoretical	Tests
30	2	Introduction to Pentium architecture	Introduction to Pentium architecture	Theoretical	Tests
31	2	Pentium register organization	Pentium register organization	Theoretical	Tests
32	2	Pipelining in Pentium	Pipelining in Pentium	Theoretical	Tests

24. 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)	M. Morris Mano, "computer System Architecture," University of California, Prentice Hall, 3rd Ed., 1993. 1- schaum's series, "Computer Architecture", Nicholas Carter, 2001. 2- John P. Hays, "Computer Architecture and Organization , "University of Michigan, McGraw Hill, 2nd Ed., 1988.
Main references (sources)	Computer Architecture: A Quantitative Approach Film by John Hennessy and David Patterson
Recommended books and references (scientific journals, reports…)	Structured Computer Organization" by Andrew Tannenbaum. "Computer Systems: A Programmer's Perspective" by Randy Bryant and David O'Hallaron.
Electronic References, Websites	https://www.khanacademy.org/computing/computer-science

Course Description Form

14.	Course Name:
Compiler	

15.	Course Code:
323 CCO	

17.	Semester / Year:
Third	

17.	Description Preparation Date:
2024/11/10	

18.	Available Attendance Forms:
	Annual

19.	Number of Credit Hours (Total) / Number of Units (Total)
	128

20.	Course administrator's name (mention all, if more than one name)
	Name: Muna Majeed laftah Email: muna.majeed@coeduw.uobaghdad.edu.iq

21.	Course Objectives
Course Objectives	1- describe the types of translator 2- explain each stage of compiler 3- convert source code to machine code

22.	Teaching and Learning Strategies
Strategy	

23. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 2	4 4 4	Introduction to compiler Compiler and interpreter Compiler stage Programming language	Design Compiler Stage using c ++ language	Theoretical and lab	the exams

3		Context free grammar	Design Compiler Stage using c ++ language	theoretical and lab	the exams
4	4	Regular expression	Design Compiler Stage using c ++ language		the exams
5	4	Lexical analyzer			
6	4	Design of lexical	Design Compiler Stage using c ++ language	Theoretical and lab	the exams
7	4	Parser			
8	4	Exam	Design Compiler Stage using c ++ language	theoretical and lab	the exams
9	4	Intermediate code	Design Compiler Stage using c ++ language		the exams
10	4	Code optimization			
11	4	Code generation table management	Design Compiler Stage using c ++ language		the exams
12	4	Examples			
13	4	Left most derivation	Design Compiler Stage using c ++ language		
14	4	Exam			
15	4	عطلة نصف السنة	Design Compiler Stage using c ++ language		
16	4	Right most derivation			
17	4	Ambiguous	Design Compiler Stage using c ++ language		the exams
18	4	Parsing techniques			
19	4	Bottom-up parsing	Design Compiler Stage using c ++ language		the exams
20		Shift reduce			
21	4	Operator precedence	Design Compiler Stage using c ++ language		the exams
22	4	Examples			
23	4	Exam	Design Compiler Stage using c ++ language		the exams
24	4	Top-down parsing			
25	4	Problems with top-down parsing	Design Compiler Stage using c ++ language		
26	4	Left recursion			
27	4	Left factoring	Design Compiler Stage using c ++ language		
28	4	Intermediate code			the exams
29		Code generation	Design Compiler Stage using c ++ language		
30		Predicative LL(1)	Design Compiler Stage using c ++ language		the exams
31			Design Compiler Stage using c ++ language		the exams
32			Design Compiler Stage using c ++ language		the exams

					the exams
					the exams
					the exams
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					the exams
					the exams
					the exams

25.	Course Evaluation

50 semester grades + 50 final exam grades = 100 college grades

27.	Learning and Teaching Resources

Compiler principles and tools, by V. Alto	
The same previous sources	
YouTube, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons.	

Course Description Form

15.	Course Name:
	Visual Basic.Net

16.	Course Code:
	330 CVP

18.	Semester / Year:
	Thrid

18.	Description Preparation Date:
	2024/11/20

19.	Available Attendance Forms:
	Annual

20.	Number of Credit Hours (Total) / Number of Units (Total)
	128

21.	Course administrator's name (mention all, if more than one name)
	Name: Dr. Auhood Hadi Jabbar Email: auhood.h@coeduw.uobaghdad.edu.iq

22.	Course Objectives

Course Objectives

1. **Study the basic concepts of visual Basic programming and learn about the basics object-oriented programming.**

2. **How to design user interfaces using windows forms and how to connect to database.**

23.	Teaching and Learning Strategies

Strategy

Teaching topics with many exercises and clarifications using a board and the projector, which enables t lecture to convey the information to the student in an interesting and effective way.

24.	Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Practical Exercises	Introduction & Visual Basic Express 2010 IDE	Theoretical & Practical	Exams: Daily and month exams, discussio and reports.
2	4	Practical Exercises	Working with Basic Controls	Theoretical & Practical	Daily and month exams, discussio and reports.
3	4	Practical Exercises	-Working with Control Properties.	Theoretical & Practical	Daily and month exams, discussio and reports.
4	4	Practical Exercises	Object Oriented Programming.	Theoretical & Practical	Daily and month exams, discussio and reports.
5	4	Practical Exercises	Writing the Code.	Theoretical & Practical	Daily and month exams, discussio and reports.
6	4	Practical Exercises	Managing Data	Theoretical & Practical	Daily and month exams, discussio and reports.
7	4	Practical Exercises	Mathematical Operations.	Theoretical & Practical	Daily and month exams, discussio and reports.
8	4	Practical Exercises	String Manipulation.	Theoretical & Practical	Daily and month exams, discussio and reports.
9	4	Practical Exercises	Conditional Statements - Using If….Then….Else	Theoretical & Practical	Daily and month exams, discussio and reports.
10	4	Practical Exercises	Conditional statements - Using Select Case	Theoretical & Practical	Daily and month exams, discussio and reports.
11	4	Practical Exercises	Looping statements	Theoretical & Practical	Daily and month exams, discussio and reports.

12	4	Practical Exercises	Arrays –static and dynamic	Theoretical & Practical	Daily and month exams, discussio and reports.
13	4	Practical Exercises	Two-Dimensional array & control array	Theoretical & Practical	Daily and month exams, discussio and reports.
14	4	Practical Exercises	Two-Dimensional array & control array	Theoretical & Practical	Daily and month exams, discussio and reports.
15	4	Exam1	Exam1	Theoretical & Practical	Daily and month exams, discussio and reports.
16	4		Half Year Break		Daily and month exams, discussio and reports.
17	4	Practical Exercises	Functions Part I Functions Part II	Theoretical & Practical	Daily and month exams, discussio and reports.
18	4	Practical Exercises	Functions Part III- Math Functions. Functions Part IV- Formatting Functions	Theoretical & Practical	Daily and month exams, discussio and reports.
19	4	Practical Exercises	Using Check Box Using Radio Button	Theoretical & Practical	Daily and month exams, discussio and reports.
20	4	Practical Exercises	Creating A Simple Web Browser.	Theoretical & Practical	Daily and month exams, discussio and reports.
21	4	Practical Exercises	Errors Handling	Theoretical & Practical	Daily and month exams, discussio and reports.
22	4	Practical Exercises	List Box control Combo Box Control	Theoretical & Practical	Daily and month exams, discussio and reports.

23	4	Practical Exercises	Using Timer	Theoretical & Practical	Daily and month exams, discussio and reports.
24	4	Practical Exercises	Creating Animation	Theoretical & Practical	Daily and month exams, discussio and reports.
25	4	Practical Exercises	Managing Graphics 1-Basic Concepts. Drawing Rectangle, ellipse, circle and polygon	Theoretical & Practical	Daily and month exams, discussio and reports.
26	4	Practical Exercises	How to connect to Access database in VB.Net	Theoretical & Practical	Daily and month exams, discussio and reports.
27	4	Practical Exercises simple projects	How to connect to Access database in VB.Net (Insert, Delete and Update)	Theoretical & Practical	Daily and month exams, discussio and reports.
28	4	Practical implementation of DB in VB (Complete system)	How to create a quick search using VB and Access DB.	Theoretical & Practical	Daily and month exams, discussio and reports.
29	4	Practical Exercises simple projects	Reports	Theoretical & Practical	Daily and monthly exams, discussions and reports.
30	4	Exam2	Exam2	Theoretical & Practical	Daily and monthly exams, discussions and reports.
31	4	Practical Exercises	Common Dialogs	Theoretical & Practical	Daily and monthly exams,

32	4	Practical Exercises	File Handling	Theoretical & Practical	Daily and monthly exams, discussions and reports.

26.	Course Evaluation

50 semester grades + 50 final exam grades = 100 college grades

28.	Learning and Teaching Resources

1."Visual Basic 2010 Made Easy", Kiong L. Voon, 1ft ED., 2011. 2. Murach's Beginning Visual Basic. Net By Anne Bohem 3- V.Basic 2019 (book,المهام المتقدمة المولف وعزب محمد عزب وعزب للمولف)	
The same previous sources	
YouTube, Pdf files uploaded to the google classroom, and presentations uploaded to the google classroom, in addition to electronic interactive lessons. https://www.tutorialspoint.com/vb.net/vb.net_database_access.htm https://www.vbtutor.com	
Adding new contents to the curriculum annually and its developing to suit the available applications or changing a few topics in the existing curriculum. Also, finding more releva resources	Curriculum Development Plan

Course Description Form

16. Course Name:
Computer teaching methods
17. Course Code:

328 CTM	

19.	Semester / Year:
Third grade 2024-2025	
19.	Description Preparation Date:
2024/11/10	
20.	Available Attendance Forms:
Academic year	
21.	Number of Credit Hours (Total) / Number of Units (Total)
60 hours	
22.	Course administrator's name (mention all, if more than one name)
23.	Course Objectives

Course Objectives	1 – Introducing students to the concept of computers, its importance, and the stages of its development
	2 – Introducing students to educational objectives, their types, the concept of each of them, and how to formulate them
	3 – Introducing the types of scientific computer knowledge and computer skills
	4 – Definition of terms related to teaching, strategy, method, style and teaching model
	5 – Training on the use of traditional and modern computer teaching methods
	6– Knowing how to plan teaching

24.	Teaching and Learning Strategies
Strategy	Lecture, interrogation, discussion, classroom and extracurricular activities, and use of PowerPoint and the Internet
25.	Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student should know the computer and compare its generations	Concept generations OF computer	Lecture and discussion And interrogation	The exams Achievement
1	2	The student should know how to Formulates goals Educational	Educational goal	Presentation and discussion	The exams Achievement
2	4	Formulates goals Behavioral	Behavioral goals	Class and classroom activities	The exams Achievement
6	12	Gives examples To know Computational	Types of knowledge Computational	Examples	The exams Achievement
3	6	Uses software the computer	Computer skills	Computer lab	The exams Achievement
13	26	Learn about teaching methods	Teaching metho	Questioning and discussion	The exams

4	8	finds out a plan Teaching	Teaching planni	lecture	The exams
					Achievement
					The exams
					Achievement

27.	Course Evaluation

Class activities (10 marks), extracurricular activities (10 marks), exams (20 marks), attendance at lectures regularly (10 marks, final exam) 50 marks

29.	Learning and Teaching Resources

Required textbooks (curricular books, if any)	Lectures computer teaching methods, prepared by the subject teacher, Prof. Dr. Hanan Hassan Maj
Main references (sources)	Accompanying sources: Vocabulary of Computer Teaching Methods (2016) of the Ministry of Hig Education and Scientific Research
Recommended books and references (scientific journals, reports…)	1- The educational computer and its educational applications, (2014) 2 - Computer teaching methods, applied vision, (2013) 3 - Computerization of teaching, (2011) 4 - Methods of teaching science, (2011).
Electronic References, Websites	The official website of the General Directorate of Curricula on the Internet

Course Description Form

17. Course Name:
Software Engineering
18. Course Code:
327 CGEP
20. Semester / Year:
Third
20. Description Preparation Date:
2024/11/10
21. Available Attendance Forms:
Annual
22. Number of Credit Hours (Total) / Number of Units (Total)
128
23.
24. Course administrator's name (mention all, if more than one name)
Name: Inas Ismael Imran

Email: enas.i@coeduw.uobaghdad.edu.iq

24. Course Objectives

Course Objectives	To follow the essential software processes of specificati design, development, verification and validation, and management

25. Teaching and Learning Strategies

Strategy	Teaching Software Engineering topics with many exercises and clarifications This application is an important topic in our lives

26. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Identify the stages of designing a Software according to the mentioned stage	Computer software	Theoretical	exams
2	2	Learn about software engineering techniques	Software engineering technique	Theoretical	exams
3	2	Identify Solve of software problems	Solving problems	Theoretical	exams
4	2	Introduction to software engineering	Introduction to S-E	Theoretical	exams
5	2	Software operations	Process activities	Theoretical	exams
6	2	List all Applications	Application	Theoretical	exams
7	2	Identify Crises	Crisis an horizon	Theoretical	exams
8	2	Software characteristics	Attribute of good software	Theoretical	exams
9	2	Identify Component of S-E	Component of S-E	Theoretical	exams
10	2	Explain Software life cycle	Software of life cycle	Theoretical	exams
11	2	Explain Software development	Software development	Theoretical	exams
12	2	Explain Software models	S-E MODEL	Theoretical	exams

13	2	Explain User requirements	User requirements	theoretical	exams
14	2	Explain System requirements	System requirements	Theoretical	exams
15	2	Explain Interfaces	Interface specification	Theoretical	exams
16	2	Explain Software document	The software requirements document	Theoretical	exams
17	2	Explain Feasibility study	Feasibility study	Theoretical	exams
18	2	Explain Requirements elicitation	Requirements elicitation and analysis	Theoretical	exams
19	2	Explain Requirements validation	Requirements validation	Theoretical	exams
20	2	Verify requirements	Requirements management	Theoretical	exams
21	2	Explain Context models	Context models	Theoretical	exams
22	2	Explain Behavior models	Behavioral models	Theoretical	exams
23	2	Explain Data models	Data models	Theoretical	exams
24	2	Explain OBJECT Properties	Object models	Theoretical	exams
25	2	Explain Models	Structured models	Theoretical	exams
26	2	Explain Architecture	Architectural design decisions	Theoretical	exams
27	2	Explain System technologies	System organization	Theoretical	exams
28	2	Explain software design	Software Design	Theoretical	exams
29	2	Explain Control styles	Control styles	Theoretical	exams
30	2	Example of Case study	Case study	Theoretical	exams
31	2	Test of software	TEST	Theoretical	exams
32	2	Examination	Examination	Theoretical	exams

28. Course Evaluation

50 semester grades + 50 final exam grades = 100 college grades

30. Learning and Teaching Resources

1. Rajab Mall, Fundamental of software engineer, prentice Hall of India 2. http:// www. tutorials point .com 3-T. Winters, T. Manshreck, and H. Wright, Software Engineering at Google: Lessons Learned from Programming Over Time, 2nd ed. Sebastopol, CA, USA: O'Reilly Media, 2023.	
The same previous sources	
YouTube, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons.	

Course Description Form

22.   Course Name:
Educational Techniques and Technology
23.   Course Code:
24.   Semester / Year:
yearly 2024-2025
25.   Description Preparation Date:
2024/11/10
26.Available Attendance Forms:

	in-person classes
27.	Number of Credit Hours (Total) / Number of Units (Total)
	60 hours/
28.	Course administrator's name (mention all, if more than one name)
	Name: Dr.Reyam Rashed
29.	Course Objectives

The Course aims to:

1. Introduce female students to the concept of educational techniques and educational technology, the history of its emergence, the foundations of educational technology and its components, a set of educational tools for educational technology, and identifying the types of educational tools for educational technology.
2. familiarize students with the importance of educational technology in the Department of Computer
3. Perceive the evolved skills and their application in applied educational technology in the Department of Computer
4. Understand the importance of educational technology concerning humans in the Department of Computer.
5. Aware of the importance of using and applying all the restrictions used in education, including technological controls

6. Teaching and Learning Strategies

Strategy	Blended e-learning, lecture, guided discussion Participatory structured interrogation, a presentation of models of educationa techniques And educational technology Show examples of teaching and learning techniques

7. Course Structure

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

1.	2	Historical background	A historical overview of educational technologies	lecture	the exams
2.	2	=	Concepts related to educational technologies	=	Oral and written
3.	2	=	Concepts related to educational technologies	Participatory questioning	Oral exams
4.	2	=	educational technology, educational technology)	=	=
5.	2	The advantages of educational techniques and technology	Factors affecting the choice of method	=	=
6.	2	=	Characteristics of educational media, and obstacles to using educational media	Participatory questioning	=
7.	2	The psychological basics of using educational techniques	Psychological foundations in choosing the method	=	=
8.	2	=	Behavioral and cognitive theories, their models, and design	=	=

No.					
9.	2	The relationship between using educational techniques and teaching	The concept of communication, its theories, and models	=	=
10.	2	=	Systems approach and its types	Discussion	Achievement tests
11.	2	The classification of educational techniques	According to the senses	Discussion	=
12.	2	=	According to experience	Directed interrogation	=
13.	2	The practical application of the material	Educational panels and their types	View models	=
14.	2	=	Optically displayed materials: transparencies	=	=
15.	2	=	slide projector, vertical projector, Multimedia projector	Flipped classroo	=
16.	2	First-semester exam	First-semester exam	=	=
17.	2	To learn about audio educational techniques and their applications	Educational telephone, language laboratory	=	=

18.	2	=	School radio	=	=
19.	2	To learn about sensory educational techniques and their applications	Models, patterns, samples	lecture	=
20.	2		Pictures and posters, educational and simulation games, educational television	Discussion	=
21.	2	To become familiar with the standards of good educational technology	Terms of use, stages of use	Directed group debriefing	=
22.	2	To learn about modern trends in educational techniques and educational technology	Educational computer and computerized program preparation	=	=
23.	2	=	E-learning, synchronous, and asynchronous learning	Discussion	=
24.	2	=	The difference between e-learning and traditional education	=	=

25.	2	To become familiar with the virtual learning environment	Smart school, virtual classroom	Flipped classrooms	report
26.	2	=	Video conferencing, e-book	=	=
27.	2	Get to know the activities	Fields and selection criteria	=	Oral test
28.	2	=	Its goals and types	=	=
29.	2	=	Class and extracurricular activities	=	=
30.	2		Verbal activities	lecture	=
31.			Non-verbal activities	=	=
32.		Second-semester exam	Second-semester exam	=	=

Course Evaluation

- Monthly written tests, oral questions, reports, and quarterly tests
Observing the performance of applications while working in educational techniques and educational technology in the Department of Computer

1. Learning and Teaching Resources

Required textbooks (curricular books, if any)	No specific curricular books Handbook of educational techniques and educationa technology, prepared by A.M.D. Tamadur Hamid Al-Fayad 2023-2024
Main references (sources)	Educational Technology and Teaching Aids, Muhammad Al-Sayyid Ali, 2002, Dar Al-Fikr Al-Arabi Cairo. 2- Technology in the learning and teaching process, Bashir Abdul Rahim Al-Kalloub, 1988, Dar Al-Shorouk, Amman. 3- Teaching and learning advice for male and female teachers, Saad Ali Zayer, 2014, Dar Al-Mawdhiyya, Amman.
Recommended books and references (scientific journals, reports…)	Educational Technologies / Ed Khudair Abbas Jari 2019 - Research the role of educational technologies in improving academic achievement Shadia bint Najib Introduction to educational technology / Dr. Ghaleb Abdel Muti Al-Farijayatl
Electronic References, Websites	The official website of the General Directorate of Curricula on the Internet www.manahj.edu.iq Follow educational channels for teaching computers on YouTube, as well as read e-books related to this online

Course Description Form

18.Course Name: Computer Security	

19.	Course Code: 436 CSoC
21.	Semester / Year:2024-2025
21.	Description Preparation Date: 2024/11/10
22.	Available Attendance Forms: Full year
23.	Number of Credit Hours (Total) / Number of Units (Total)
	128
25.	Course administrator's name (mention all, if more than one name)
	Name: Asst. Prof. Iman M.G. Alwan Email: ainms_66@coeduw.uobaghdad.edu.iq
25.	Course Objectives

Course Objectives	**TO explain the principle of data security and the encryption and decryption methods**

26.	Teaching and Learning Strategies

Strategy	1. Using books and manuals 2. Using electronic classrooms to present boosting lessons to the students

27.	Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	Implementation of algorithm	Introduction. Attacks, Security and Mechanisms.	**Theoretical And practical**	**exams**	**4**
2	Implementation of algorithm	A model for network Security. Network Access Security Model.	**Theoretical And practical**	**exams**	**4**
3	Implementation of algorithm	2.1 Cryptography Classification	**Theoretical And practical**	**exams**	**4**

		2.2 Classical Encryption techniques (Symmetric Cipher Model)			
4	Implementation of algorithm	2.2.1 Substitution Techniques	**Theoretical And practical**	**exams**	**4**
5	Implementation of algorithm	1-1-Caesar Cipher. 2- Monoalphabetic	**Theoretical And practical**	**exams**	**4**
6	Implementation of algorithm	3- Playfair Cipher. 4- Hill Cipher. 5- Polyalphabet Cipher)	**Theoretical And practical**	**exams**	**4**
7	Implementation of algorithm	Transposition Techniques. 1- Rail fence Cipher.	**Theoretical And practical**	**exams**	**4**
8	Implementation of algorithm	2- Matrix transposition Cipher. 3-Code Book.	**Theoretical And practical**	**exams**	**4**
9	Implementation of algorithm	Modern Encryption Techniques	**Theoretical And practical**	**exams**	**4**
10	Implementation of algorithm	exam	**Theoretical And practical**	**exams**	**4**
11	Implementation of algorithm	3.1 Simplified Data Encryption Standard (DES)	**Theoretical And practical**	**exams**	**4**
12	Implementation of algorithm	) Block Cipher Principle.	**Theoretical And practical**	**exams**	**4**
13	Implementation of algorithm	**Public key Cryptography**1Introduction.	**Theoretical And practical**	**exams**	**4**
14	Implementation of algorithm	Principle of Public Key Encryption.	**Theoretical And practical**	**exams**	**4**
15	Implementation of algorithm	Symmetric Versus Public Key Encryption.	**Theoretical And practical**	**exams**	**4**
16		تطبيق		**exams**	**4**
17		تطبيق		**exams**	**4**
18		تطبيق		**exams**	**4**
19		تطبيق		**exams**	**4**
20		تطبيق		**exams**	**4**
21		تطبيق		**exams**	**4**
22		تطبيق		**exams**	**4**

23	Implementation of algorithm	EXAM	**Theoretical And practica**	**exams**	**4**
24	Implementation of algorithm	Application of Public-Key Encryption.	**Theoretical And practica**	**exams**	**4**
25	Implementation of algorithm	RSA Algorithm. Simple RSA Implementation examples.	**Theoretical And practica**	**exams**	**4**
26	Implementation of algorithm	Application of Public-Key Encryption.	**Theoretical And practica**	**exams**	**4**
27	Implementation of algorithm	RSA Algorithm. Simple RSA Implementation examples.	**Theoretical And practica**	**exams**	**4**
28	Implementation of algorithm	Security of RSA.	**Theoretical And practica**	**exams**	**4**
29	Implementation of algorithm	Message Authentication.	**Theoretical And practica**	**exams**	**4**
30	Implementation of algorithm	EXAM	**Theoretical And practica**	**exams**	**4**
31	Implementation of algorithm	Information hiding	**Theoretical And practica**	**exams**	**4**
32	Implementation of algorithm	watermarking	**Theoretical And practica**	**exams**	**4**

29.   Course Evaluation

Theoretical test (35 M)

Practical test (15 M)

31.   Learning and Teaching Resources

Required textbooks (curricular books, if any)	Computer Security, Principals, and Practice, 5th edition By William Stalling and Lawrie Brown
Main references (sources)	Computer Security, Principals and Practice, 5th edition By William Stalling and Lawrie Brown
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	YouTube channels and electronic lectures uploaded to electronic classroom, electronic interactive classes

Course Description Form

19.	Course Name:
Multimedia	

20.	Course Code:
434 CMM	

22.	Semester / Year:
fourth	

22.	Description Preparation Date:
2024/11/10	

23.	Available Attendance Forms:
Annual	

24.	Number of Credit Hours (Total) / Number of Units (Total)
128	

26.	Course administrator's name (mention all, if more than one name)
Name: Nashwan Alsalam Ali Email:nashwan_alsalam60@coeduw.uobaghdad.iq	

26.	Course Objectives
Course Objectives	**To learning how different types of media such as text, image, audio, and video processing and manupluations.**

27.	Teaching and Learning Strategies
Strategy	

28. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Introduction to Multimedia	Introduction	Theoretical and lab	the exams
2	4	Media Basics	PHOTOSHOP		
3	4	Image representation	Functions in Photoshop		
		Image formation	Read Images from files	theoretical and lab	the exams
4	4	Image smoothing	Image enhancement		
5	4	Audio formats	Image enhancement		the exams
6	4	Audio waves	Audio format	Theoretical and lab	
7	4	Introduction to Data compression	Audio format		the exams
8	4	RLE algorithm	Data compression		
9	4	Need for compression in Multimedia	Data compression	theoretical and lab	the exams
10	4	Examination	Data compression		
11	4	Image compression fundamentals and Standards	Examination		the exams
12	4	Audio compression	Huffman algorithm		
13	4	Video compression	Huffman algorithm		the exams
14	4	Multimedia System Architecture	Shannon Algorithm		
15	4	Examination	RLE algorithm		
16	4	تطبيق	Examination		
17	4				
18	4	Multimedia OS			the exams
19	4	Multimedia communication Systems	تطبيق		
20	4	Multimedia Database Systems			the exams
21	4	Multimedia Database Systems	RLE algorithm		the exams
22	4	Synchronization	Multimedia		
23	4	Application architecture			the exams
24	4	Future Directions	project		
25	4	Future Directions	Multimedia		the exams
26	4				
27	4		project		
28	4		Multimedia		

| 29 30 31 32 | 4 | | project Multimedia project Multimedia project Multimedia project Multimedia project | | the exams the exams the exams the exams the exams the exams the exams the exams the exams the exams the exams the exams the exams the exams the exams |

30.	Course Evaluation

50 semester grades + 50 final exam grades = 100 college grades

32.	Learning and Teaching Resources

Fundamentals of Multimedia
Ze-Nian Li & Mark S. Drew, Pearson Education, 2004

Multimedia BASICS **Susanne Weixel & Jennifer Fulton, 2ⁿᵈ Edition, 2010** **Data compression the complete reference** **David Salmon, 3ed edition, 2001**	
The same previous sources	
YouTube, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons.	

Course Description Form

20.Course Name: Smart applications	
21. Course Code: 438CSA	
23. Semester / Year: 2024-2025	
23. Description Preparation Date: 2024/11/10	
24. Available Attendance Forms: Full year	
25. Number of Credit Hours (Total) / Number of Units (Total)	
40	
27. Course administrator's name (mention all, if more than one name)	
Name: Asst. Prof. Dr. Asmaa Abdulrazaq Alqaisi Email: asma_72@coeduw.uobaghdad.edu.iq	
27. Course Objectives	

Course Objectives	**teach the basics and principles of artificial intelligence and learn the necessary methods and algorithms.**

28. Teaching and Learning Strategies	

Strategy	Giving students an idea about

		1-data mining and data warehouses 2-Artificial intelligent agent 3-genetic algorithm 4-Neural Network 5-fuzzy logic				

29.	Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**	
1	Data Mining	(Principal)	**Theoretical**	**exams**	**4**	
2	Data Mining	Technique s	**Theoretical**	**exams**	**4**	
3	Data Warehouse	(Principa l)	**Theoretical**	**exams**	**4**	
4	Implementation of algorithm	algorithm	**Theoretical**	**exams**	**4**	
5	Implementation of algorithm	algorithm	**Theoretical**	**exams**	**4**	
6	Association Rule	Principal	**Theoretical**	**exams**	**4**	
7	Implementation of algorithm	A priory algorithm	**Theoretical**	**exams**	**4**	
8	Implementation of algorithm	FP growth	**Theoretical**	**exams**	**4**	
9	Artificial Intelligent Agent	Methods and Application	**Theoretical**	**exams**	**4**	
10	exam	exam	**Theoretical**	**exams**	**4**	
11	Genetic Algorithm	Algorithm	**Theoretical**	**exams**	**4**	
12	Genetic Algorithm	Algorithm	**Theoretical**	**exams**	**4**	
13	Machine Learning	**Techniques**.	**Theoretical**	**exams**	**4**	
14	Classification	Algorithm	**Theoretical**	**exams**	**4**	

15	Classification	Algorithm	Theoretical	exams	4
16	Artificial Neural Network	Single layer perceptron	Theoretical	exams	4
17	Artificial Neural Network	Multilayer perceptron	Theoretical	exams	4
18	Artificial Neural Network	Backpropagation Algorithm	Theoretical	exams	4
19	Fuzzy Logic	Methods	Theoretical	exams	4

31. Course Evaluation					
Theoretical test (50 M)					

33. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Data mining, Principals, , 5th edition
Main references (sources)	Data mining, Principals,, 5th edition
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	YouTube channels and electronic lectures uploaded to electronic classrooms, electronic interactive classes

Course Description Form

21. Course Name:
Operating Systems
22. Course Code:
435 COS
24. Semester / Year:
Fourth

24.	Description Preparation Date:				
	2024/11/10				
25.	Available Attendance Forms:				
	Annual				
26.	Number of Credit Hours (Total) / Number of Units (Total)				
	2 hour lecture and 2 hour lab per week/ 6 units				
28.	Course administrator's name (mention all, if more than one name)				
	Name: Prof. Dr. Ayad A. Abdulsalam Email: ydsalam@coeduw.uobaghdad.edu.iq				

28. Course Objectives

Course Objectives

The course gives an introduction to operating systems. The central focus is on how an operating system, in an efficient or fair way, provides an abstracted interface to the hardware resources for programs.

The course consist of theoretical aspects of operating systems and practical experience in using C programming and shell scripting.

29. Teaching and Learning Strategies

Strategy	Teaching operating systems topics with many exercises and clarifications, many homework assignments by google classroom, involving student to solve some class exercises.

30. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Introduction to Operating Systems	Introduction to OS, objective, history	Theoretical and Lab.	Student activity
2	4	OS Structure	OS structures, mission and hierarchy.	Theoretical and Lab.	Student activity
3	4	Component of OS	Operation Management, Memory management, File management	Theoretical and Lab.	assignment
4	4	OS types	Batch system, Time sharing system, Parallel System, Real time system, Distributed system	Theoretical and Lab.	Student activity

5	4	processes	Process definition, process life cycle, PCB structure	Theoretical and Lab.	quiz
6	4	Process types	Dependent and Independent processes, and threads concept.	Theoretical and Lab.	assignment
7	4	CPU scheduling	Concept of scheduling, and criteria.	Theoretical and Lab.	Oral test
8	4	Scheduling algorithms	FCFS, and Shortest Job first algorithms	Theoretical and Lab.	assignment
9	4	Scheduling algorithms	SJF and Priority algorithms	Theoretical and Lab.	Class activity
10	4	Scheduling algorithms	Round Robin & MLFBQ algorithms	Theoretical and Lab.	assignment
11	4	Scheduling criteria	Criteria of evaluation the scheduling algorithms	Theoretical and Lab.	Student activity
12	4	examination		Theoretical and Lab.	
13	4	Deadlock	Definition of deadlock and concept with life examples, Deadlock conditions.	Theoretical and Lab.	Oral test
14	4	Deadlock Handling	Deadlock preventions algorithms.	Theoretical and Lab.	quiz
15	4	Deadlock safe states	Deadlock avoidance algorithms	Theoretical and Lab.	assignment
16	4	Deadlock detection	Algorithms of deadlock detection and recovery.	Theoretical and Lab.	Oral test
17	4	Examination		Theoretical and Lab.	
18	4	Memory management	Logical and physical addresses relationships.	Theoretical and Lab.	quiz
19	4	Memory management	Paging & Structure of the Page Table	Theoretical and Lab.	assignment
20	4	Memory management	Segmentation and Table Structure	Theoretical and Lab.	Student activity
21-26		In the secondary schools application for 6 weeks			
27	4	File management	File types and structures	Theoretical and Lab.	Student activity

28		File management	File allocation tables	Theoretical and Lab.	quiz
29		File management	File storage and fragmentation strategies.	Theoretical and Lab.	Oral test
30		Review		Theoretical and Lab.	

32.	Course Evaluation

35 semester grades + 15 lab grades+ 50 final exam grades = 100 college grades

34.	Learning and Teaching Resources

1- Operating system concepts ABRAHAM SILBERSCHATZ, 2011 John Wiley & Sons, Inc.

2- Introduction to Operating System

The same previous sources	
YouTube, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons, files uploaded to the electronic classroom, and presentations uploaded to the electronic classroom, in addition to electronic interactive lessons.	

Course Description Form

22. Course Name:
Practical education
23.   Course Code:
CAP 440
25.   Semester / Year:
fourth grade (2023-2024)
25.   Description Preparation Date:
2024/11/10
26.   Available Attendance Forms:
Academic year
27.   Number of Credit Hours (Total) / Number of Units (Total)

	120 hours				

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

29. Course Objectives

Objectives of the study material

According to the objectives of teaching practical education (observation and application) for the scien[t

departments/curriculum development project/Ministry of Higher Education and Scientific Research (2016) wh[

are:

1-Providing the student/teacher with job information that facilitates his understanding of the mean[

importance and goals of practical education

Its foundations are in teacher preparation curricula

2 – Helping the student/teacher in clarifying and consolidating theoretical principles in educational

psychological sciences and academic courses.

And cultural, which he studies in the College of Education and puts it for experimentation through pract[

education to judge its suitability

For practical reality

3 – Helping the student/teacher to understand his educational role gradually through the individual observa[

and application stage

And collective application

4 – Providing the student/teacher with general directions and instructions regarding the teacher's various r[

and the tasks assigned to him within the school.

30. Teaching and Learning Strategies

Strategy	1 - Lecture, interrogation and discussion to teach theoretical material 2 - Classroom observations in Baghdad city schools 3 - Individual classroom application (micro-teaching) 4 - Collective application in schools in Baghdad and the governorates 5 - Writing reports on the collective application and discussing them

31. Course Structure

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

1	4	Define the concept of practical educat and explain its importance, multiple goals, and foundations	Practical education its conce Its importance, goals foundations	lecture	Achievement tests
1	4	Explains professional ethics. There are many characteristics of a good teacher	It explains professional ethi and the many characteristics a good teacher	Discussion	Achievement tests
4	16	Apply teaching skills	Teaching skills Academic and professional	Teaching Mini	Feedback form
2	8	Write a daily teaching plan	Practical applications for preparation Daily teaching plan	Discussion	practical test
3	12	She writes her notes about Teaching	Classroom observations	Observatio in Bagh schools	Viewing forms
4	16	Applying the steps of micro-teaching	Microteaching	Individual application	Feedback form
6	24	Use teaching skills	Group application	Group application In Baghdad schools And provinces	Feedback form
2	8	Write a report about the application Collective	Collective application repor	Discussion and questioning	Reports preparatic
7	28	Application reports are discussed Collective	Discuss application reports	Discussion	Discuss reports

33. Course Evaluation

1 - Recording observations about classroom teaching (observation) (5 marks)
2- Writing a daily teaching plan (5 marks)
3 - Individual application in class (10 marks)
4 - Collective application in schools (60 marks)
5 - Discussing the collective application report (5 marks)
6 - Practical education test (10 marks)
7 - Extracurricular activities (5 marks)
Total (100 marks)

35. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Principles of Practical Education, Magda Ibrah Al-Bawi, College of Education for Science Pure/Ibn al-Haytham,2014
Main references (sources)	According to the sources of practical educatio vocabulary of the Ministry of Higher Educatio and Scientific Research) 2016
Recommended books and references (scientific journals, reports…)	- Mandatory practical education, prepared Prof. Dr. Hanan Hassan Majeed 2023 2 - Teach competencies and teaching techniques (2011).
Electronic References, Websites	The official website of the General Directorate Curricula on the Internet www.manahj.edu.iq

Course Description Form

1. Course Name:
General English Language
2. Course Code:
442 CEL
3. Semester / Year:
annual
4. Description Preparation Date:
2024/11/10
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (80) / Number of Units (2)
7. Course administrator's name (mention all, if more than one name)
Name: Israa Amer Mahmood Email: israa.amer@coeduw.uobaghdad.edu.iq

8. Course Objectives

Course Objectives	1- The aim of teaching general English to non-specialized departments are to develop language skills English as a foreign language for fourth-stage female students and developing the student's ability to speak the English language Fluently. 2- Introducing the student to the rules of the English language through: explaining the rules and solving the book's exercises. 3- Understanding and clarifying the pieces and knowing their meanings. 4- Developing the ability to formulate sentences in English.

9. Teaching and Learning Strategies

Strategy	1-Through careful explanation of the text in its form and content, as well explaining the rules of the English language. 2- Communicate and speak using the English language. 3- Listening to the English language constantly to develop the linguistic aspect and correct pronunciation 4- Through write continuously. 5- Continuous reading and ensuring students' active participation discussion and clarification

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	1	Chapter One	No Place Like Home	Reading and General discussion about the unit.	Participate in the discussion and cond daily and monthly examinations -Oral and written
3-4	1	Chapter Two	Been there, done that	Reading and General discussion about the unit.	Participate in the discussion and cond

					daily and monthly examinations -Oral and written
5-6	1	Chapter Three	What a story!	Reading and General discussion about the unit.	Participate in the discussion and cond daily and monthly examinations -Oral and written
7-8	1	Chapter Four	Nothing but the truth	Reading and General discussion about the unit.	Participate in the discussion and cond daily and monthly examinations -Oral and written
9	1	An exam	An exam		
10-11	1	Chapter Five	An eye to the future	Reading and General discussion about the unit.	Participate in the discussion and cond daily and monthly examinations -Oral and written
12-13	1	Chapter Six	Making it big	Reading and General discussion about the unit.	Participate in the discussion and cond daily and monthly examinations -Oral and written
14-15	1	Chapter Seven	Getting on together	Reading and General discussion about the unit.	Participate in the discussion and cond daily and monthly examinations -Oral and written
16-17	1	Chapter Eight	Going to extremes	Reading and General discussion about the unit.	Participate in the discussion and cond daily and monthly examinations -Oral and written
18	1	An exam	An exam		
19-20	1	Chapter Nine	Things aren't what They used to be	Reading and General discussion about the unit.	Participate in the discussion and cond daily and monthly examinations -Oral and written
21-22	1	Chapter Ten	Risking life and limb	Reading and General discussion about the unit..	Participate in the discussion and cond

					daily and monthly examinations -Oral and written
23-24	1	Chapter Eleven	In your dreams	Reading and General discussion about the unit..	Participate in the discussion and cond daily and monthly examinations -Oral and written
25-26	1	Chapter Twelve	It's never too late	Reading and General discussion about the unit..	Participate in the discussion and cond daily and monthly examinations -Oral written
27	1	An exam	An exam	.	

11. 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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	New Headway Plus Upper-Intermediate. Editors: Liz and John Soars Oxford Press.
Main references (sources)	1-English Grammar in Use, R. Murphy (Cambridge) 2-The Elements of Style by Strunk & White. 3- Word Power Made Easy by Norman Lewis.
Recommended books and references (scientific journals, reports…)	1-Developing listening and speaking Skills. 2-conversations and communication book. 3-every day conversation book. 4-English conversation book
Electronic References, Websites	1-BBC Learning Channels & websites http://www.bbc.co.uk/learningenglish/ 2-English Language Learning and resources http://www.bbc.co.uk/learning/ 3-https://www.engvid.com/ 4-https://www.merriam-webster.com/ 5-http://www.grammar-monster.com