

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



Academic Program and Course Description Guide

2025

Academic Program Description Form

University Name: Al-Mustansiriya University

College/Institute: College of Basic Education

Scientific Department: Computer Science Department

Academic or Professional Program Name: Computer Science Program

Final Degree Title: Bachelor's Degree in Computer Science

Academic System: Semester

Description preparation date: June 1, 2025

File completion date: June 22, 2025


Signature

Name of Department Head:

Asst. Prof. Dr. Ibrahim


Signature

Name of Academic Assistant:

Asst. Prof. Dr. Ahmed Baqer

File reviewed by

the Quality Assurance and University Performance Division

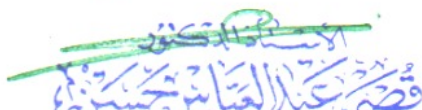
Name of Director of the Quality Assurance and University

Performance Division: Prof. Dr. Salam Hussein Alwan

Date 24/6/2025

Signature

Dean's approval


عميد كلية التربية الاساسية



1. Program Vision

The Computer Science Department seeks to deliver scientific knowledge to students in the department, as it is concerned with cognitive aspects (theoretical and practical) so that each student becomes qualified to develop his own abilities..

2. Program Mission

Preparing a qualified cadre in the department who possesses applied scientific skills that qualify them to transfer this experience to primary and middle school students in particular and the community in general.

3. Program Objectives

The department seeks to achieve the following objectives:

- 1-Preparing efficient teaching staff capable of teaching computer science
- 2-Developing and updating educational curricula in the field of computer science
- 3-Participating as much as possible in scientific conferences and seminars in order to learn about the scientific knowledge in this field.
- 4- Trying to encourage students to maintain computers and manage systems so that upon graduation the student can maintain the laboratories of the school in which he works
- 5- The department seeks to teach all college students how to use computers and benefit from them, especially in the field of the Internet and some ready-made systems
- 6- The department seeks to build advanced laboratories, the goal of which is to teach students the practical aspect so that each student becomes qualified to apply all practical aspects in this field.
- 7- Holding training courses on using computers and operating ready-made programs for college staff.

4. Program Accreditation

None

5. Other external influences

None

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	9	17	12%	Basic
College Requirements	14	44	31.5%	Basic
Department Requirements	32	78.5	56.5%	Basic
Summer Training	–			
Other	–			

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

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
1st /1st semester	CSB15PES416	Democracy and Human Rights	2	
	CSB15EMS419	Arabic Language	2	
	CSB15PE427	Developmental Psychology	3	
	CSB15DB411	Structure Programming1	2	2
	CSB15IP412	Computer Technology and Structure	1	2
	CSB15OS413	Educational Applications	1	2
1st /2nd semester	CSB15AI414	English Language	2	
	CSB15VP415	Islamic Education / Civilization	2	
	CSB15GR417	Environmental and Health Education	2	
	CSB15TP421	Principles of Education	3	
	CSB15PES416	Structured Programming 2	1	2
	CSB15EMS419	Logical Design	1	2
	CSB15PE427	Discrete Structures	2	2
	CSB15DB411	Systems Management (Maintenance)	1	2
2nd /3rd semester	CSB15IP412	English	2	
	CSB15OS413	Arabic	2	
	CSB15AI414	Educational Guidance and Mental Health	3	

	CSB15VP415	Baath crimes	2	
	CSB15GR417	Computer Theory	2	1
	CSB15TP421	Microprocessor Programming	2	1
	CSB15PES416	Programming C ++	2	1
	CSB15EMS419	Data structures (1)	2	1
	CSB15PE427	Systems Management (Maintenance)	1	1
2nd /4th semester	CSB15DB411	Democracy	2	
	CSB15IP412	English	2	
	CSB15OS413	Educational Statistics	3	
	CSB15AI414	Educational Psychology	2	
	CSB15VP415	Numerical Analysis	2	2
	CSB15GR417	Computer Graph	3	
	CSB15TP421	Object Orientated Programming	2	1
	CSB15PES416	Data structures (2)	2	1
3rd /5th semester	CSB15EMS419	Educational Research methods	2	
	CSB15PE427	General teaching methods and their applications	2	
	CSB15DB411	System Analysis	2	1
	CSB15IP412	Compilers	2	1
	CSB15OS413	Computer Architecture	2	1
	CSB15AI414	Communications and networks security	2	1
	CSB15VP415	Operations Research	3	
3rd /6th semester	CSB15GR417	Measurement and Evaluation	2	
	CSB15TP421	Curriculum and Textbook	2	
	CSB15PES416	Prolog Programming	2	1
	CSB15EMS419	Computer Architecture	2	1
	CSB15PE427	Communications and networks security	2	1
	CSB15DB411	Data Security	1	1
	CSB15IP412	Software Engineering	3	
4th /7th semester	CSB15OS413	Professional ethics	2	
	CSB15AI414	Administration and Supervision Educational	2	

	52115337	Practical education (observation)	3	
	52115450	Data Base	2	1
	52115451	Image Processing	2	1
	52115452	Operating System	2	1
	52115453	Artificial Intelligence	2	1
	52115454	Visual Programming	2	1
4th/8th semester	52115480	Graduation Research	2	
		Application		12

8. Expected learning outcomes of the program

Knowledge

Cognitive objective

- 1- Enabling students to understand and collect all the terms, concepts and symbols of programming languages and their concepts.
- 2- Enabling students to understand and collect methods for creating, modifying and developing various programs and educational applications.
- 3- Enabling students to understand and collect ways to follow programs inside computers
- 4- Enabling students to understand and collect ways of working on electronic publishing
5. Enabling students to understand and collect ways to use systems and manage databases
- 6- Enabling students to understand and acquire information, knowledge and concepts in networks and communications and their theoretical foundations
- 7- Enabling students to understand and acquire **modern** programming languages, concepts and databases
- 8- Enabling students to understand, collect and understand educational and psychological information, facts and concepts
- 9- Enabling students to understand and collect methods of computer strategies and methods
- 10- Introducing students to the most important references and sources in computer science

Skills

Skill objective

1. Enabling students to acquire the skills of managing information systems, software and databases
2. Enabling students to learn and acquire the skills of web design and supervision

	3. Enabling students to acquire the skills of using modern technologies in teaching and learning computer science concepts 4. Enabling students to possess the capabilities of designing and inventing effective educational activities that encourage students to learn and participate in it. 5. Enabling students to acquire classroom management skills, classroom interaction, and the art of dealing with classroom problems in an educational manner 6. Providing students with the necessary skills to develop software of all kinds 7. Enabling students to acquire the skills of testing the suitability of programs for work 8. Enabling students to acquire the skills of identifying problems resulting from computer misuse and working to solve them 9. Enabling students to acquire scientific research skills 10. Enabling students to possess the skills of preparing and building electronic and paper tests and ways to correct them
Ethics	
Job ethics and vocational responsibility	1) Enhancing students' sense of the importance of studying computer science. 2) Encouraging students to practice professional and ethical academic behavior as a supreme value. 3) Enhancing the spirit of cooperation among students and teamwork. 4) Develop the students' sense of responsibility during the study and work period. 5) Raising students to respect human dignity. 6) Training students to respect the freedom of expression, thinking and creativity of others. 7) Training students to respect the rights of the beneficiaries of their profession, culture, religion, gender and race. 8) Educating students on scientific honesty in presenting and presenting scientific and educational information. 9) Educating students on a culture of integrity and fighting corruption in all its forms. 10) Develop a feeling among students of belonging to the homeland and loyalty to it.

9. Teaching and Learning Strategies

- 1- Giving lectures
- 2- Dialogues and internal discussions
- 3- Duties
- 4- Use of e-learning
- 5- Blended Education
- 6- Blended Learning Strategies
- 7- Brainstorming and conclusions
- 8- Assigning students to conduct research and reports related to academic topics.

10.Evaluation methods

- 1- Oral and written tests and discussion
- 2- Computer practical tests
- 3- Extracurricular activities
- 4- Homework assessment

11.Faculty

Faculty Members								
	Academic Rank	Instructor's name	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
			General	Special			Staff	Lecturer
1	Assistant Professor	Dr. Ibrahim Najm Al-Din	Computer Science	Technology and Information Management			Staff	
2	Lecturer	Dr. Hassanein Abdel Rahman Karim	Agricultural Sciences	Agricultural Mechanization			Staff	
3	Professor	Dr.Suha Hussein	Physics Sciences	Thin Films + Image Processing			Staff	
4	Assistant Professor	Dr. Zeina Yawuz Abdulqadir	Statistics	Statistics			Staff	
5	Assistant Professor	Dr. Mustafa Salam Kazem	Software Engineering	Artificial Intelligence			Staff	
6	Assistant Professor	Dr. Rasha Awad Abtan	Physics Sciences	Image Processing			Staff	
7	Assistant Professor	Dr. Zainab Khiyon Abdul Ridha	Computer Science	Artificial Intelligence			Staff	
8	Assistant Professor	Dr. Uday Ghazi Faleh	Philosophy	Philosophy of Language			Staff	
9	Assistant Professor	Noor Abdul Malik Naji	Physics	Physics Teaching Methods			Staff	
10	Assistant Professor	Rawa Ibrahim Issa	Mathematics & Computer Applications	Numerical Analysis			Staff	
11	Lecturer	Dr. Ahmed Ali Ahmed Al-Mulla	Computer Science	Network Security			Staff	
12	Lecturer	Dr. Amani Youssef Nouri	Computer Science	Artificial Intelligence			Staff	

13	Lecturer	Dr. Hussam Ibrahim Hussein	Computer Science	Data Mining			Staff	
14	Lecturer	Balsam Waleed Majeed	Mathematics	Math Teaching Methods			Staff	
15	Lecturer	Mohsen Raad Kareem	Computer Science	Networks			Staff	
16	Assistant Lecturer	Duraïd Thamer	Computer Science	Computers			Staff	
17	Assistant Lecturer	Mohammed Nassif Mustafa	Computer Engineering	Software			Staff	
18	Assistant Lecturer	Ahmed Saad Mohammed	Software Engineering	Information Systems			Staff	
19	Assistant Lecturer	Ahmed Hassan Khanjar	Computer Science	Computers			Staff	
20	Assistant Lecturer	Saad Mohsen	Computer Science	Computers			Staff	
21	Assistant Lecturer	Zainab Hashem Fattouhi	Computer Science	Artificial Intelligence			Staff	
22	Assistant Lecturer	Saja Hikmat Dawood	Software Engineering	Software Engineering			Staff	
23	Assistant Lecturer	Waleed Khalid Mahmoud	Physics Sciences	Laser Physics and Optoelectronics			Staff	
24	Assistant Lecturer	Maram Jidouh Hassan	Physics Sciences	Solid State Physics			Staff	
25	Assistant Lecturer	Haider Mohsen Jassim	Physics Sciences	Condensed Matter			Staff	
26	Assistant Lecturer	Saif Salah Abdul Hassan	Biology Sciences	Zoology			Staff	
27	Assistant Lecturer	Sarah Majid Shaaban	Science - Biology	Science Teaching Methods			Staff	
28	Assistant Lecturer	Haider Ali Jarallah	Art Education	Art Education Teaching Methods			Staff	
29	Assistant Lecturer	Mohammed Ahnaf Ali	Computer Engineering	Computer Engineering			Staff	
30	Assistant Lecturer	Hussein Faris Saeed	Computer Science	Software			Staff	
31	Assistant Lecturer	Nadia Shams Al-Din Abdul Sattar	Computer Engineering	Computer Engineering			Staff	

Professional Development

Mentoring new faculty members

Helping the new faculty member to adapt practically and psychologically, develop his skills in teaching and learning, and manage the educational process, and determine the severity of anxiety that may hinder his participation and integration in university work and activities through open seminars and workshops.

Professional development of faculty members

Continuous training for faculty members to improve their teaching, communication and technical skills through workshops, training courses and conferences, and encouraging them to use technology in teaching, communicating with students and using interactive educational programs.

12. Acceptance Criterion

Central admission – according to the requirements of the Ministry of Higher Education and Scientific Research, so that it matches the latest admission requirements in Iraqi universities.

13.The most important sources of information about the program

- Curriculum books approved by the sector committee of the College of Basic Education
- The website of the college and university
- Related auxiliary sources

14.Program Development Plan

- Curricula are developed by updating curricula at certain rates to keep pace with the continuous development in the field of computers and teaching methods.
- Developing and training faculty members through their participation in courses, seminars, and scientific workshops and participation in scientific conferences and exhibitions.

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
1 st /1 st semester	CSB15HD122	Democracy and Human Rights	Basic				✓				✓				✓
	CSB15AL330	Arabic Language	Basic				✓				✓				✓
	CSB15PD123	Developmental Psychology	Basic				✓				✓				✓
	CSB15SP111	Structure Programming1	Basic				✓				✓				✓
	CSB15SCT112	Computer Technology and Structure	Basic				✓				✓				✓
	CSB15EA124	Educational Applications	Basic				✓				✓				✓
1 st /2 nd semester	CSB15EL128	English Language	Basic				✓				✓				✓
	CSB15IE129	Islamic Education / Civilization	Basic				✓				✓				✓
	CSB15EHE127	Environmental and Health Education	Basic				✓				✓				✓
	CSB15FD125	Principles of Education	Basic				✓				✓				✓
	CSB15S121	Structured Programming 2	Basic				✓				✓				✓
	CSB15LD122	Logical Design	Basic				✓				✓				✓

	CSB15DM11 4	Discrete Structures	Basic				✓				✓				✓
	CSB15SM11 5	Systems Management (Maintenance)	Basic				✓				✓				✓
2nd /3rd semester	CSB15HD12 2	English	Basic				✓				✓				✓
	CSB15EL219	Arabic	Basic				✓				✓				✓
	CSB15AL211 0	Educational Guidance and Mental Health	Basic				✓				✓				✓
	CSB15PH217	Baath crimes	Basic				✓				✓				✓
	CSB15BC228	Computer Theory	Basic				✓				✓				✓
	CSB15CT211	Microprocessor Programming	Basic				✓				✓				✓
	CSB15M212	Programming C ++	Basic				✓				✓				✓
	CSB15P213	Data structures (1)	Basic				✓				✓				✓
	CSB15DS214	Systems Management(Maintenance	Basic				✓				✓				✓
2nd /4th semester	CSB15SM21 5	Democracy	Basic				✓				✓				✓
	CSB15D226	English	Basic				✓				✓				✓
	CSB15EL219	Educational Statistics	Basic				✓				✓				✓
	CSB15ES225	Educational Psychology	Basic				✓				✓				✓
	CSB15EP216	Numerical Analysis	Basic				✓				✓				✓
	CSB15NA221	Computer Graph	Basic				✓				✓				✓
	CSB15CG222	Object Orientated Programming	Basic				✓				✓				✓

	CSB15OOP2 23	Data structures 2	Basic				✓				✓				✓
3rd /5th semester	CSB15DS224	Educational Research methods	Basic				✓				✓				✓
	CSB15MER3 16	General teaching methods and their applications	Basic				✓				✓				✓
	CSB15GMT3 18	System Analysis	Basic				✓				✓				✓
	CSB15SA311	Compilers	Basic				✓				✓				✓
	CSB15C312	Computer Architectur	Basic				✓				✓				✓
	CSB15CA313	Communications and networks security	Basic				✓				✓				✓
	CSB15CNS31 4	Operations Research	Basic				✓				✓				✓
3rd /6th semester	CSB15OR315	Measurement and Evaluation	Basic				✓				✓				✓
	CSB15ME32 6	Curriculum and Textbook	Basic				✓				✓				✓
	CSB15C318	Prolog Programming	Basic				✓				✓				✓
	CSB15PP321	Computer Architectur	Basic				✓				✓				✓
	CSB15CA322	Communications and networks security	Basic				✓				✓				✓
	CSB15CNS32 3	Data Security	Basic				✓				✓				✓
	CSB15DS324	Software Engineering	Basic				✓				✓				✓

4th /7th semester	CSB15SE325	Professional ethics	Basic				✓				✓				✓
	CSB15PES416	Administration and Supervision Educational	Basic				✓				✓				✓
	CSB15EMS419	Practical education (observation)	Basic				✓				✓				✓
	CSB15PE427	Data Base	Basic				✓				✓				✓
	CSB15DB411	Image Processing	Basic				✓				✓				✓
	CSB15IP412	Operating System	Basic				✓				✓				✓
	CSB15OS413	Artificial Intelligence	Basic				✓				✓				✓
	CSB15AI414	Visual Programming	Basic				✓				✓				✓
4th/8th semester	CSB15VP415	Graduation Research	Basic				✓				✓				✓
	CSB15GR417	Application	Basic				✓				✓				✓

Course description form for the subject (Democracy and Human rights) / First stage / first semester

1. Students will be introduced to human rights.
2. Students will be introduced to human rights (concept, characteristics, and types).
3. Students will explain the role of human rights in divine laws and religions.
4. Students will list the contents of human rights.
5. Students will describe the rights and freedoms in the Iraqi Constitution of 2005.
6. Students will be introduced to the origins of democracy.
7. Students will explain the concept of democracy.
8. Students will distinguish between forms of democracy.
9. Students will list the components of democracy.
10. Students will be introduced to the elements of democracy.
11. Students will explain democracy and Islam.
12. Students will describe the nature of democratic systems.
13. Students will list the types of democratic systems.

Haider Ali

Course description form for the subject (Arabic) / First stage / first semester

1- The student will recognize that speech consists of a word, a verb, and a noun.
2- The student will recognize that fatha, damma, and sukun are diacritical marks.
3- The student will recognize the types of words whose diacritical marks are original.
4- The student will learn Arabic literature.
5- The student will learn the meaning of the Mu'allaqat.
6- The student will learn about the poets of the Mu'allaqat.

د. لیلی بدر

Course description form for the subject (Educational Applications) / First stage / Second semester

1. The student learns the basic concepts of educational applications.
2. The student should understand the mechanism of educational applications and their applications.
3. The student learns about digital learning theory and how to integrate it into applications.
4. The student learns about the tools and platforms for developing educational applications.
5. The student learns about user interface design.

6. The student learns to design educational content (texts, images, videos)
7. The student learns to analyze and evaluate educational applications.
8. The student learns to create educational applications without programming, such as APP Inventor.
9. The student learns to develop and test the prototype of educational applications.
10. The student learns to manage educational projects.
11. To learn marketing and publishing strategies for educational applications.
12. The student learns security and privacy in educational applications.
13. The student learns the future trends of educational applications.



أ.م.د مصطفى سلام كاظم

Course Description form (C++ **first** Stage/**1st**Course programing)/

1.	The student will know the fundamentals and advanced concepts of the C++ language well
2.	The student will distinguish between traditional programming and creative programming and how to develop innovative programs.
3.	The student will learn basic programming concepts such as variables, conditional statements, loops, data types, and functions.
4.	The student should acquire skills in analyzing and effectively solving programming problems.
5.	The student should learn how to design logical and structured programs using custom data structures and objects.
6.	The student should understand how to correctly use exceptions and generics in software development.
7.	The student should be enthusiastic about continuous learning in the field of programming and C++.
8.	The student should participate in the programming community through practical projects and discussions.
9.	The student should collaborate with peers in project implementation and develop teamwork skills.
10.	The student should prepare to succeed in software development jobs by building a strong foundation in C++.
11.	The student should develop critical thinking skills by analyzing code and evaluating different programming solutions
12.	The student should learn how to use modern software development tools, such as version control systems and debugging tools.

**Course Description form (Structure & Computer Technique)/ First
Stage/1th Course**

1.	Data representation: (Numbers, Characters)
2.	Data Storage: (Disks, Tapes, and CD-Roms)
3.	Computer Arithmetic : (Integer, Fixed-Point, and Floating-Point Arithmetic)
4.	Computer Architecture : (Von- Neumann Model, Processor Architecture, Busses, Registers. ALU, Control Unit , RAM AND ROM)
5.	Interface : (Computer I/O Processing , I/O Devices (Input : Keyboard, Touch Screen, Mouse AND Output: Display, Printer)), Data Transmission,
6.	Machine Language : (Machine Level Programming)
7.	Programming Languages.
8.	Principles of Editors, Translators-(Assemblers, Interpreters, Compilers), Linkers, and Loaders
9.	Operation Systems and Windows
10.	Common Application Packages (Word processor)

حسين فارس سعيد

Course Description form (developmental psychology)First Stage/1thCourse

- | |
|---|
| 1.The student will learn about the different stages of development |
| 2.The student will learn about the principles of development |
| 3.The student will learn about research methods in developmental psychology |
| 4.The student will learn about the theories of development |
| 5- The student will learn about the branches of developmental psychology. |

د اشواق صبري

Course Description form (logic design)First Stage/1thCourse

- | |
|--|
| 1. Providing the student with the basic knowledge and skills to design and analyze digital circuits using logic gates. |
| 2. Understand how to build digital systems from basic components to complex systems. |
| 3. Learn to convert between number systems. |
| 4. Learn to distinguish between different number systems and convert numbers between them. |
| 5. Learn arithmetic operations in the binary system. |
| 6. Learn basic and combinational logic gates (AND, OR, NOT, NAND, NOR, XOR, XNOR). |
| 7. Learn simplification tools and design methods. |
| 8. Learn to simplify logical expressions and design combinational circuits using appropriate tools. |

نادية شمس الدين

Course description form for the subject (foundations and principles of education) / First stage / second semester

1- The student will learn the foundations and principles of education.
2- The student will learn the fundamentals of education.
3- The student will learn the theories of learning and teaching.
4- The student will learn teaching methods and tools.
5- The student will learn to understand the methods and tools for evaluating educational performance.

د عدي غازي

Course description form for (Islamic Education) / first stage / second semester

1. That students acquire religious knowledge of Islamic concepts and consolidate awareness of the importance of instilling the correct behaviors in themselves..
2. That the student realizes the importance of studying Islamic civilization, how to infer it, and the impact that she leaves in his life and how to preserve it from the dangers of intellectual intellectual conquest, so he has a love for this belief and to belong to Islam.
3. The student learns the Islamic values and the love of following the example of the Prophet (may God bless him and grant him peace) and following the example.
4. To learn the balance in taking the soul for its material and spiritual needs according to the provisions of Islamic Sharia.
5. To try to develop the horizons of awareness among students in various aspects of life and acquire information and experiences.
6. The student can adopt methods of scientific thinking and confront problems.

7. That the student knows the principles and pillars of Islam in which he is distinguished from other religions, with the necessity of ratification of all the apostles and books that are mentioned in the Holy Quran.

م.د. زينة غني عاشور

**Course description form for the subject (General English) / First stage /
Second semester**

- | |
|---|
| <ol style="list-style-type: none">.1 Students will be introduced to parts of speech in English Language..2 Students will learn about nouns..3 Students will learn about kinds of nouns..4 Students will do exercises on singular and plural nouns..5 Students will do exercises on gender and its types (male and female.).6 Students will learn about verbs..7 Students will learn about kinds of verbs..8 Students will learn about verb tenses..9 Students will do exercises on verb tenses..10 Students will understand and interpret written English through comprehension passages ..11 Students will be introduced to phonetics..12 Students will learn about long and short vowel sounds..13 Students will do phonetic transcription exercises. |
|---|

Instr. Iman Mahdi Khdairi

**Course description form for the subject (system Administration
(maintenance / First stage / Second semester**

1. Students will learn the physical components of a computer.
2. Students will understand the meaning of computer maintenance.
3. Students will demonstrate practical computer maintenance techniques.
4. Students will learn the software components.
5. Students will learn about input and output devices.
6. Students will learn how to install Windows.
7. Students will explain the concept of booting.
8. Students will distinguish between types of memory.
9. Students will learn about the components of a processor.
10. Students will understand secondary storage devices.

د.حسنين عبد الرحمن

**Course Description form (C++ programing)/ first
Stage/2stCourse**

1.	Study the concept of sequence
2.	Study the concept of selections
3.	)Study the concept of (IF-THEN-ELSE,CASE-OF
4.	Study the concept of repetition (WHILE-DO) and (REPEAT - UNTIL, FOR-DO)
5.	Study data structures: (arrays, sets, strings, records, files. Recursion)
6.	Study the SORTING (BUBBLE)
7.	Study the SEARCHING (SEQUENTIAL)

حسين فارس سعيد

Course Description form (discrete stricture-2-) / first Stage/2th Course

• General introduction to Combinatorial Analysis and knowledge of the basic mathematical concepts that must be followed.
• The student learns mathematical operations(Combinations) on the set of all types.
• The student knows (Algebraic Systems).
• The student learns the properties of relations for sets and the connection between them(Propositional Calculus).
• The student distinguishes between the techniques of constructing relations for the set(Boolean Algebra)
• The student learns the concept of the (Boolean LAWS)
• Explain the mathematical Boolean Expressions to students and how to calculate them
• Explain to students the Definition and their types and how to deal with each type of them
• Teach students to draw OR Operator graphically and identify the circle from the data that was drawn
• Teach students to draw NOT Operator OR Operaor graphically and identify the function from the data that was drawn(Graphs)
• The student knows the concept of the Logic Gate mathematically and determines the ways to use it in the modern form

د. رشا عواد

Course Description form (Health education)/ The second stage / third Course

1. The student lists the most important components of public health
2. The student distinguishes between healthy eating patterns
3. The student knows healthy habits
4. The student explains the concept of epidemic diseases
5. The student compares epidemic diseases
6. The student compares types of vitamins
7. The student lists the cases that require taking vitamins
8. The student distinguishes between malnutrition diseases
9. The student lists the ways to choose a lifestyle free of malnutrition diseases
10. The student knows the concept of first aid
11. The student Explain first aid methods for fracture cases
12. The student List the steps for first aid for bleeding cases

ام نور عبد الملك

Course Description form (Health education)/ The second stage / third Course

1. The student lists the most important components of public health
2. The student distinguishes between healthy eating patterns
3. The student knows healthy habits
4. The student explains the concept of epidemic diseases
5. The student compares epidemic diseases
6. The student compares types of vitamins
7. The student lists the cases that require taking vitamins
8. The student distinguishes between malnutrition diseases
9. The student lists the ways to choose a lifestyle free of malnutrition diseases
10. The student knows the concept of first aid
11. The student Explain first aid methods for fracture cases
12. The student List the steps for first aid for bleeding cases

نور عبد الملك

Course description form for the subject (Baath crimes) / Second stage / Second semester

1. The student learns the basic concepts of crimes against humanity.
2. The student should know the criminal methods of the former regime against the Iraqi people.
3. The student should become familiar with the Baath ideology of suppressing others.
4. The student should learn about the torture tools used by the previous regime.
5. The student learns about the crimes committed by the previous regime.
6. The student should know how the Baath Party established its oppressive system.
7. The student should learn about the prisons of the former regime.
8. The student should know how the Baath Party came to power.
9. The student should know the reasons for the Shaaban uprising.
10. The student should learn the names of the national symbols who were eliminated during the era of the previous regime.
11. The student should learn about mass graves.
12. The student should know the number of victims of the previous regime.
13. The student should know the psychological effects of crime.

أ.م. حيدر سامي عبد

Course Description form (Microprocessor)/ Second Stage/3th Course

1- The student should be familiar with the structure of microprocessing.
2- The student learns the structure of microprocessor and its operation.
3- The student should know the 8085 processor.
4- The student learns the structure of the 8085 and the instructions of the 8085.
5- The student learns the data transfer process.
6- The student should be able to perform arithmetic and logical operations.
7- The student learns to write assembly language programs.
8- The student learns the counter, time delays, inventory and sub-programs.
9- The student must re-run as programming instructions.
10-The student learns to represent structure expressions and tree structure as well as converting the general tree into binary.
11- The student should understand sorting, the purpose of sorting, its steps, in addition to the sorting method (internal, bubble, and external).

12- The student learns the types of search algorithms, sequential search, and binary search.



Asst. Prof Ibrahim Najmuldeen

Course Description form (Computation Theory)/ Second Stage/ 3thCourse

1.	The student should become familiar with Computation Theory , its concepts and Applications.
2.	The student should learn about Sets, how to Notations them, and their type and also Learn about the language and its types.
3.	The student should be able to distinguish the operations and Properties that can be Applied to Sets.
4.	The student should become familiar with Kleen theorm.
5.	The student should be familiar with the concept of regular expressions.
6.	The student should become familiar with the grammar, structure, derivation, parse tree, and ambiguous and

non-ambiguous grammar.
7. The student should be familiar with Chomsky's Normal Form and distinguish between its types: Non-Restricted Grammar, context-sensitive grammar, context-free grammar, and regular grammar, and how to convert grammar into Chomsky's Form.
8. The student should learn about the Greibach Normal Form and how to convert the grammars into the Greibach Normal Form.
9. The student should be familiar with automata and finite automata and their types, which are deterministic finite automata (DFA) and non-deterministic finite automata (NFA).
10. The student should differentiate between deterministic finite automata (DFA) and non-deterministic finite automata (NFA), also know FINITE AUTOMATA EQUIVALENCE OF DFA and NFA, and how to convert from (NFA) to a finite machine (DFA).
11. The student will become familiar with the transition diagram and learn how to convert regular expressions into finite automata.
12. To know how to minimize DFA
13. The student will be able to identify finite automata with empty transition and how to eliminate the empty transitions from finite machines.
14. The student will learn how to extract the regular expression from the finite machine.
15. The student will be familiar with the finite automata with output which includes two methods: Moore machine and Mealy machine, and the equivalence between Moore and Mealy machines.

16. The student will learn about regular grammar and distinguish between left- linear grammar and right- linear grammar.
17. The student will be familiar with TWO – WAY FINTE AUTOMATA, Turing machine, push-down automata, DECIDABILITY RULES and UNDECIDABLE.
18. The student should become familiar with COMPLEXITY THEORM



Asst.Lecture. Saja Hikmat Dawood

**Course Description form (Systems Management (Maintenance))/ Second
Stage/ 3thCourse**

19.	The student gets to know the concept of computer maintenance
20.	The student gets to know the types of maintenance
21.	The student gets to remember the purpose of maintenance
22.	The student gets to know the devices used in maintenance
23.	The student gets to know the system unit
24.	The student gets to know the power unit
25.	The student gets to know the motherboard and its details
26.	The student gets to know the chipset

27. The student gets to know the memory and distinguishes between its types
28. The student gets to know the hard disk and its details and how it works
29. The student gets to know the concept of electrostatics
30.The student gets to know the concept of low power or energy
31.The student gets to know the concept of insulator breakdown
32.The student gets to know the concept of insulating the motherboard of the computer
33.The student gets to know conductors and semiconductors
34.The student gets to know the concept of static electricity
35.The student gets to know the concept of caution against static electrical discharge
36.The student will learn the concept of BIOS
37.The student will learn how to boot from the computer
38.The student will learn how to format
39.The student will learn how to install the Windows operating system

د. حسنین عبد الرحمن کریم

**Course Description form (C++ programming)/ Second
Stage/3thCourse**

• The student will know the fundamentals and advanced concepts of the C++ language well
The student will distinguish between traditional programming and creative programming, and how to develop innovative programs.
The student will learn basic programming concepts such as variables, conditional statements, loops, data types, and functions.
The student should acquire skills in analyzing and effectively solving programming problems.
The student should learn how to design logical and structured programs using custom data structures and objects.
The student should understand how to correctly use exceptions and generics in software development.
The student should be enthusiastic about continuous learning in the field of programming and C++.
The student should participate in the programming community through practical projects and discussions.
The student should collaborate with peers in project implementation and develop teamwork skills.
The student should prepare to succeed in software development jobs by building a strong foundation in C++.
The student should develop critical thinking skills by analyzing code and evaluating different programming solutions
The student should learn how to use modern software development tools, such as version control systems and debugging tools.

زينب هاشم فتوحى

Course description form for the subject (Data Structures) / Second stage / First semester

1. The student should learn about the importance of data structures, how to choose the appropriate graphic structure
2. The student will learn about one-dimensional and two-dimensional matrices with examples.
3. The student will learn about the most important single lists in linked lists, their representation, operations specific to single lists, and single list algorithms.
4. The student will learn about binary lists, their representation, operations on binary lists, and algorithms.
5. The student should be familiar with prefix, infix, and postfix operations in arithmetic expressions, introduction, types of arithmetic expressions, and examples.
6. The student will learn about the algorithms used in data structures (pop & push algorithms) and their importance.
7. The student will learn about the importance of operations and applications of the stack, with examples.
8. The student should learn about research methods and types.
9. The student should be familiar with the processes of converting arithmetic expressions from one form to another (prefix, postfix, infix)
10. The student should learn about the importance of the queue and its operations.
11. To know the most important queuing algorithms, which are (the Enqueue algorithm & Dequeue algorithm).
12. The student should learn about the importance of the circular queue and the operations related to the queue.

Assistant Professor Zainab Khyioon Adb Alrdha

Course description form for the subject (Data Structures) / Second
stage / Second Semester

13. The student should know the meaning of trees, and their definition, and explain their most important applications and types.
14. The student should know the algorithmic transformation processes within binary trees (Tree travers type) In Order, Pre – Order, Post - Order
15. The student will learn about the most important single lists in linked lists, their representation, operations specific to single lists, and single list algorithms.
16. The student should be familiar with the diagrams and the types used (Adjacency Matrix, Incidence Matrix, Adjacency List).
17. The student should be familiar with the Minimum Spanning Tree (MST) Kruskal's Algorithm • Prim's Algorithm.
18. The student will learn about the most important characteristics of the algorithm and its complexity, in addition to Space Complexity, Time Complexity, and Asymptotic analysis.
19. The student should be familiar with the explanation of the most important algorithms related to sorting, examples of algorithms related to searching, examples
20. To make the student familiar with the most important problems, we recursively use the divide and conquer Max-Min Problem).
21. The student should learn about the most important algorithms (Greedy algorithms) to obtain the best ideal solution.

Assistant Professor Zainab Khyioon Adb Alrdha

Course Description form (OOP)/ Second Stage/4thCourse

1. The student should understand the fundamentals of OOP such as objects, classes, and inheritance.
2. The student should learn how to design programs using OOP principles like abstraction and encapsulation.
3. The student should differentiate between types of inheritance and apply them in class design.
4. The student should grasp the concept of abstraction and how to use it to simplify programming solutions.
5. The student should learn how to use interfaces to enhance scalability.
6. The student should differentiate between types of polymorphism and use them effectively.
7. The student should acquire skills in analyzing and designing programming solutions using OOP.
8. The student should work in teams to develop software projects based on OOP principles.
9. The student should learn how to write clean and maintainable code.
10. The student should understand how to handle exceptions and errors in programming.
11. The student should learn how to utilize libraries and frameworks to support OOP development.

12. The student should develop critical thinking skills through code analysis and project evaluations.

زينب هاشم فتوحى

**Course Description form (Computer Graph)/ Second
stage/4thCourse**

40.The student learns the basic concepts of computer graphics

41.The student understands screen patterns

42.The student learns the types of screens used in drawing

43.The student learns about input and output devices

44.The student learns about drawing algorithms

45.The student learns the algorithm for drawing vertical, horizontal and
Diagonal lines

46.The student learns the DDA algorithm for drawing a line

47.The student learns Bresenham's algorithm for drawing a line, circle
and ellipse

48.The student learns to draw a circle on the computer screen using the
circle equation

49.The student learns to draw a circle on the computer screen using the
polar formula algorithm

50.The student learns to draw an ellipse on the computer screen using
the ellipse equation



prof. Dr.Suha Hussein Ibraheem

Course Description form(Numerical Analysis)/ forth Stage/4thCourse

1.The objective of numerical analysis course is to introduce the students to the extent to which numerical methods are needed for solving various scientific problems, and to train them to use these methods to find approximate solutions to the issues raised in various fields of research. The numerical analysis course includes six chapters, respectively:

- Estimating errors
- Solving nonlinear equations
- interpolation
- Numerical integration
- Solving the systems of Non-linear equations
- Introduction to the solution of ordinary differential equations

2.The student's knowledge of the sources and types of errors. Estimating errors in operations The four arithmetics

3. Introducing the most important numerical methods used in solving equations Linearity with error calculation in each method, including the field bisection method , the Secant method and Newton's method. Learn about solution algorithms in order to develop software Computer help in solving

4. Learn the techniques of the interpolation process and derive and use the most important interpolation formulas, such as Newton's formula and Lagrange's formula as well as the least squares method and process Opposite completion

5. The student should know the most famous numerical methods for calculating definite integrals and estimating errors Such as the rectangle method, the trapezoid method, and the Simpson method

6. Identify the simplest numerical methods for solving ordinary differential equations The first and second orders transformed with respect to the derivative, including Euler's method and the method Rung Kuta

Course Description form (Educational Statistics)/ second Stage/4th Course

51.	The student should be familiar with the concept of statistics and its application
52.	The student should be familiar with the concept of descriptive statistics and the concept of inferential statistics
53.	The student should learn graphical methods
54.	The student should learn data collection methods and prepare the questionnaire
55.	The student should learn how to create a frequency table
56.	The student should distinguish between descriptive data and quantitative data
57.	The student should distinguish between classified and unclassified data
58.	The student should be familiar with the types of samples and how to draw them from the community
59.	The student should calculate the measures of central tendency and distinguish the difference between them
60.	The student should calculate the measures of dispersion and distinguish the difference between them
61.	The student should learn how to find the Pearson correlation coefficient
62.	The student should learn how to find the Siberman correlation coefficient

Course Description form (operation research)/ *third* Stage/*5th* Course

1. The student gets to know the concept of operations research and its applications
2. The student learns the concept of linear programming and methods for solving the model –Drawing method to solve the linear programming model – The simplex method to solve the linear programming model
3.The student learns to convert to the standard and legal form
4. The student should distinguish between the initial solution and the optimal solution
5. The student will learn to calculate the cost of the business network for the project
6. The student will be familiar with how to draw networks and businesses and the pert method
7. The student gets to know the concept of game theory
8. The student learns to find the matrix of games
9. The student learns the formula for the transportation problem and methods for solving the problem
10. The student finds the optimal solution to the game matrix

Dr.zinah yawiz

**Course description form for the subject(computer architecture) /
third stage / 5th course**

2. Defining the concept of computer architecture in general and how the computer enters, processes and outputs data
3. Definition of terms (data, instructions and programs)
4. Explain the basic components of a computer which include the hardware, the arithmetic and logic unit, the control unit, registers and memories
5. Explain the methods of connecting the basic components of the computer, which include the signal bus, the data bus, and the control signal bus
5. Definition of the 8086 microprocessor and its components
6 –Defining how software and hardware components are linked and interacted with
7–Definition of the term performance and how we distinguish between computers in terms of speed in completing tasks, data processing, and the amount of work completed during a specific time
8– Definition and explanation of the Bus Interface Unit and how it works
9– Definition and explanation of the Execution Unit (EU) and how it works
10– Definition of records, their types, and how each type of record works
11– Data Flow During the fetch cycle
12–Defining the types of memory (RAM, ROM) and their branches in detail

Course Description form (communications)/ **third** Stage/ 5th Course

Study data communications, its characteristics and parts .1
Study of data representation and flow .2
.3 Study the network, its importance and types
Study the protocol and its elements .4
Study the transmission media and their types .5
Study the concept of optical fibers .6
Study the concept of data transfer capacity and criteria for evaluating .7 channel capacity
Study the forms of networks .8
Study the OSI MODEL and its layers .9

1. The student should understand the fundamental concepts of compilers such as lexical analysis, syntax analysis, and code generation.
2. The student should learn how to design an interpreter or compiler using appropriate data structures.
3. The student should acquire skills in lexical analysis and how to convert source code into an internal representation.
4. The student should understand how to build symbol tables and manage variable scopes.
5. The student should learn how to apply grammar rules using parsing techniques.
6. The student should differentiate between types of compilers such as first-pass and second-pass compilers.
7. The student should understand the concept of optimization and how to improve the generated code.
8. The student should learn how to handle errors during the analysis and compilation stages.
9. The student should acquire skills in performance optimization through various optimization techniques.
10. The student should understand how to build a virtual machine to execute the generated code.
11. The student should learn how to design new programming languages and understand the associated challenges.

Course Description form (System Analysis)/ **Third Stage/
5th Course**

6. The student should become familiar with systems theory, the concept of the system, and the components or elements of the system. The student should also distinguish between the characteristics of the system and the concept of subsystems.
7. The student should become familiar with the concept of information systems and the reasons for building information systems, in addition to becoming familiar with the sources and components of information systems.
8. The student should distinguish between the types of systems.
9. The student should distinguish between systems analysis and systems design and introduce the concept to students in addition to identifying the reasons that lead to systems analysis.
10. The student should know the systems analyst and list and explain his characteristics, skills and roles.
11. The student should become familiar with the stages of the information systems life cycle and the appropriate tools.
12. The student should become familiar with the concept of analysis design and the tools used for analysis and design, which are data flow diagrams, data dictionary, decision trees, decision tables, structured English, pseudocode, and use cases.
13. Students are trained in the field of systems analysis and design through case study or proposed projects for each group of students, as well as preparing them to work as a team.



Asst.Lecture. Saja Hikmat Dawood

Course Description form (Teaching methods)/ The third stage / 5th Course

1. The student should know the concept of teaching
2. The student should know different teaching strategies
3. The student should know the appropriate teaching methods for each subject
4. The student should clearly distinguish between the old and new concepts of the curriculum
5. The student should know the lecture method
6. The student should list the steps of the problem-solving method
7. The student should compare between the deductive and inductive methods
8. The student should write a lesson plan with integrated elements
9. The student should know effective teaching
10. The student should list the most important features of effective teaching
11. The student should know creative teaching
12. The student should list the most important steps of creative teaching

ا.م. نور عبد الملك

Course Description form (Research Methods)/ The Third stage / 5th Course

1. The student should know the concept of science
2. The student should know the steps of scientific research
3. The student should distinguish between the types of research
4. The student should know historical research
5- The student should explain the concept of descriptive research
6- The student should list the types of survey research
5. The student should know the concept of the sample
6- The student should compare the methods of selecting the appropriate sample
6. The student should know the concept of the questionnaire
7. The student should count the types of questionnaires
8. The student should explain the concept of observation
9. The student should distinguish between the types of tests
.The student should write a summary report on the stages of preparing a research

Course Description form (Communications and networks security)/
Third Stage/2nd Course

14.	The student does not know the concept of communications and communication networks.
15.	The student should distinguish between communication-oriented and non-communication-oriented communication.
16.	.The student should know the ISO reference model.
17.	The student understands the seven-layer model.
18.	The student understands the TCP/IP model.
19.	The student understands the expected problems in networks and identifies them in any of the seven layers.
20.	The student understands the data link layer and error control.
21.	The student should know how to control data flow in networks.
22.	The student should know the X-Modem case studies.
23.	The student should know the Arpanet case studies.
24.	The student should know the case studies Hdle
25.	The student should be able to control access to the media.

Asst. Prof Ibrahim Najmuldeen

**Course Description form (computer architecture)/ third
Stage/6th Course**

1. Define the memory system and draw memory Hierarchy
2. the characteristics of the memory system
3. the four classifications of Flynn with a drawing Explain
4. Define the Secondary memory and What are its characteristics
5. Explain the basis of direct memory access in details
6. compute the time needed to process instructions in stage pipelining versus and sequential technique

م.م احمد سعد

Course description form for the subject (Measurement and Evaluation) / Third stage / 6th course

26. The student should know the concept of measurement.
27. The student should know the concept of evaluation.
28. The student should know the concept of the test.
29. The student should list the types of classroom tests.
30. The student should know the steps for preparing classroom tests.
6 –The student should be familiar with the educational objectives – their formulation
7– The student should be able to prepare a specification table.
8 –The student should be familiar with the methods of interpreting grades.
9 –The student should learn about honesty and its types.
10 –The student should learn about stability and its types.
11 –The student should know the criteria.

م. بلسم وليد

Course Description form (Security)/ forth Stage/6th Course

• Study the importance of computer security
• Study the types of computer attacks and types of security controls
• Study how to hack a computer and types of security branches
•
• Study security vulnerabilities and defensive control methods
• Study cryptography and decryption
• Study mono-alphabetic and multi-alphabetic encryption
• Study the characteristics of good encryption and security related to the program
• Study the problem of access to information

م.م احمد سعد

Course Description form (**Software Engineering**)/ **Third Stage/** **6th Course**

31. The student should be familiar with the concept of software crisis, know software and types of software, know software engineering and list the characteristics of a software engineer.
32. The student should compare software and software, compare software engineering and computer science, and compare software engineering and system engineering.
33. The student should list and explain the characteristics of software, the attributes of good software, and software applications.
34. The student should be familiar with the software life cycle.
35. The student should distinguish the types of models used for software development and compare them, which are the waterfall model, the prototyping model, the Evolution software process model, which includes the incremental model, the spiral model, and the exploratory model.
36. The student should know the requirements, software requirements, types of requirements, functional and non-functional requirements, and be familiar with the software requirements documents (SRS).
37. The student should become familiar with the concept of requirements analysis, the stages of software requirements analysis, and the principles of analysis.
38. The student should become familiar with the analysis model and its components, which are the data model and its components, the functional model, the behavioral model, in addition to becoming familiar with the concept of cardinality and modality.
39. The student should become familiar with the analysis modeling approaches, which are structure analysis and object-oriented analysis.
40. The student will be familiar with the structured analysis model which are data dictionary (D.D), Entity Relationship Diagram (ERD), data flow diagram (DFD), state transition diagram (STD), The

process specification (PSPEC).
41.The student will become familiar with software design, the stages of software design, and the components of the design model, which are data design, architectural design, interface design, component-level design, and its techniques, which are structured programming, graphical design, tabular design notation, and program design language (PDL).
42.The student should distinguish between top-down and bottom-up software design approaches and Hybrid design.
43.The student should know the software testing, the testing goals and distinguish between the testing process stages, the Test cases techniques, which are the black-box test and the white-box experience, and the difference between the alpha test and the beta test.
44.The student should distinguish between software project management and software project manager, and the student should become familiar with the concept of project planning, the concept of project risk management, the concept of software quality assurance, and project management tools (Gantt Charts, PERT Charts and Resource Histogram).
45.The student will learn about the concept of software maintenance, why modifications are required, types of maintenance, maintenance costs, and the concept of software re-engineering and component reusability.
46.The student will become familiar with the concept of object-oriented software engineering.



Asst.Lecture. Saja Hikmat Dawood

**Course Description form (Curriculum and analysis of the book)/
The third Stage/6th Course**

1.	The student knows the educational curriculum
2.	That distinguishes the student between the ancient and modern concept for curriculum
3.	The student explains the effect of the ancient curriculum on the teacher.
4.	The student explains the impact of modern curriculum on the teacher.
5.	The student has established the basis of the curriculum.
6.	The student shows the relationship of culture in the curriculum.
7.	The student knows the educational target
8.	The student should format educational goals within Bloom levels.
9.	The student has multiplied by content
10.	The student multiplies the properties of good calendar
11.	The student has the characteristics of separate materials approach
12.	The student will discuss the criticism of the activity approach.

**Course Description form (prolog programming lang.)/ third
Stage/6th Course**

1.Introducing students to one of the fifth generation languages, the languages of artificial intelligence
2.That the student learns the difference between traditional languages that he has previously studied and languages that are programmed based on logic
3. The student will learn a programming language that runs under the Microsoft–Dos operating system
4.The student learns to program smart programs based on prediction, inference, and finding all possible solutions
5.The student learns to think logically and develop solutions and algorithms to solve problems
6.The student learns to program programs that simulate and are part of the robotics programming system
7.Giving students an introduction to the concept of artificial intelligence and its current role in the world
8.The student learns the philosophy of implementing such programs based on logic and description
9.The student learns how to transform the problem into descriptive programs based on logic
10. The student learns the structure of writing these languages, which is based on description and logic
11. The student learns how to ask a goal question in order to find the results



Dr.Amani Y

Course Description form (Image processing)// forth Stage/7thCourse

1. The student learns the basic concepts of image processing
2. Understands the method of converting a continuous signal to digital
3. The student learns the relationships that link the pixels of a digital image
4. The student learns the methods of calculating the distance between the pixels of a digital image
5. The student understands how to draw the histogram of a digital image
6. The student will learn about ways to improve the digital image by modifying the frequency histogram
7. The student will study the statistical properties of the digital image
8. The student will learn ways to enlarge and reduce digital images
9. The student will understand the reason for the distortion of digital images
10.The student will learn how to remove distortion from digital images using digital filters
11.Learn about ways to compress the digital image



prof. Dr.Suha Hussein Ibraheem

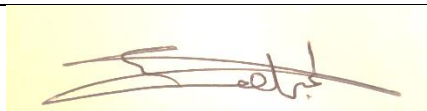
Course Description form (visualbasic(V.B)/ forth Stage/7th Course

•General introduction to the programming language (Visual Basic) and the basics of the language
• The student gets to know the conditional instructions (conversion duty) and distinguishes between them
• The student learns to deal with variables and when to use them
• The student distinguishes the difference between repetition and conditional instructions
• The student prepares the dialogue functions with the user in different educational ways
• The student designs the arrays of control elements and uses them in different ways
• Teaching students about the animation feature of the program
• The students get to know how to deal with the dialog box
• Helping students access files in easy programming ways
• Designing students techniques for dealing with objects
• The student gets to know how to deal with databases
• Teaching the student to use Windows libraries
• The student distinguishes between dealing with lists and dealing with texts

د.رشا عواد

Course Description form (Database)/ forth Stage/7st Course

1- The student understands the concept of databases (concepts and architecture).
2- The student understands the types of databases and how to deal with them.
3- The student should become familiar with the relational model (relational concepts and relational algebra).
4- The student should be able to design the database such as functional dependencies and the entity-relationship model.
5- The student understands the mechanism of SQL database operation.
6- The student understands query trees, the standard model, transformation rules, and query plans.
7- The student should be able to deal with the inquiry.
8- The student should become familiar with other concepts of database methods.
9- The student should learn about hierarchical systems.
10- The student should be familiar with network systems.
11- The student should be able to create models and link them to the database.
12- The student should be able to prepare reports and print them.



Asst. Prof Ibrahim Najmuldeen

**Course description form for the subject (Observation) / Fourth stage /
7th course**

12. The student should be familiar with the concept of teaching.
13. The student gets to know different teaching strategies.
14. The student should know the appropriate teaching methods for each subject.
15. The student should know the appropriate teaching methods for each subject.
5 – The student should learn about computer teaching methods.
6 –The student learns successful teaching skills.
7–The student should be familiar with the elements of an integrated lesson plan.
8–The student writes a model lesson plan.

ا.م. نور عبد الملك
م. بلسم وليد

Course Description form (Artificial Intelligence)/ **Forth Stage/** **7th Course**

The student should become familiar with the concept of artificial intelligence, its types, branches and applications.
The student should become familiar with the concept of knowledge representation and knowledge representation schemes, which are the logical representation scheme (propositional and predicate logic), the procedural representation scheme (theorem proof (solution)), the network representation scheme (semantic network, conceptual graph), and the structural representation scheme (frames and texts).
The student should become familiar with the concept of production rules, their components, and control of search in production systems, which includes two methods: data-driven search (forward chaining) and goal-driven search (backward chaining).
The student should become familiar with the concept of state space search space and search terms, and the student should differentiate between search algorithms (informed or intelligent search and uninformed or blind search).
The student should distinguish between formed or intelligent search algorithms, which are (depth-first search, breadth-first search)
The student should distinguish between uninformed or blind search algorithms, which are (hill climbing, best-first search (Dijkstra's algorithm, A- algorithm, A*-algorithm)
The student should become familiar with Expert Systems: Functions and Structures of Knowledge-Based Systems, Forward and Backward Chaining, Handling Uncertainty, User Interfaces (Why, How, What If, Expert System Shells, An Example of A Commercial System Shell)
The student will learn about Prolog Programming: Facts, Rules, Queries, Recursive Programming, Lists, Arithmetic Expressions, Backtracking and Cut, Negation as Failure, Simple Examples for Applications, in addition to applying search algorithms.

Asst.Lecture. Saja Hikmat Dawood

Course Description form (Management and supervision)/ The fourth
th Course7stage /

1. The student should know the concept of management
2. The student should know the concept of discipline
3. The student should list the stages of educational management
4. The student should distinguish between school management methods
5- The student should know the concept of leadership
6- The student should know the skills of classroom management
5. The student should explain the elements of classroom management
6- The student should summarize the concept of educational supervision
7. The student should explain the tasks of educational supervision
8. The student should compare the methods of educational supervision
9. The student should know the evaluation in educational supervision
10. The student should write a report on management

د غسان رشید