**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-**2024**

# Introduction:

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

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

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

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

## Concepts and terminology:

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

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

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

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

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

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

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

**Teaching and learning strategies:** They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

# Academic Program Description Form

**University Name: Wasit University**
**Faculty/Institute: College of Education and Pure Sciences**
**Scientific Department: Computer Department**
**Academic or Professional Program Name: Bachelor**
**Final Certificate Name: Bachelor of Education**
**Academic System: Annual**
**Description Preparation Date: 2024-2025**
**File Completion Date: 12/11/2024**

**Signature:**
**Head of Department Name:**
Assist. Prof. Dr. Esraa Saleh Abman
**Date:** 12/11/2024

**Signature:**
**Scientific Associate Name:**
Assist Prof. Dr.Mahdi Alwan Al-Quraishi
Asst Dean for Academic Affairs & Graduate Studies
**Date:** 12/11/2024

جامعة واسط
الاداء الجامعي

**The file is checked by:**
**Department of Quality Assurance and University Performance**
**Director of the Quality Assurance and University Performance Department:**
**Date:** 12/11/2024
**Signature:**

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

**Approval of the Dean**
12/11/2024

## 1. Program Vision

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

## 2. Program Mission

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

## 3. Program Objectives

1. Prepare teaching staff to supply middle, high, and preparatory schools with the necessary teaching skills for computer science subject through the department's scientific programs and activities to create a generation committed to the ethics and values of the profession.
2. Prepare academic cadres in the field of master's studies in computer science specialization to meet the requirements of the job market, and support the educational and pedagogical process in our beloved Iraq.
3. Contribute to serving the community and enhancing continuous interaction between the college and scientific and social institutions to achieve community partnership and implement the motto "The University in the Service of the Community".
4. Produce rigorous scientific and educational research in the field of computer science that addresses issues enriching scientific knowledge in this field.
5. Work on improving and developing the capabilities and skills of faculty members and all staff at the college to ensure achieving comprehensive quality management in scientific and administrative areas.
6. Obtain national academic accreditation for the computer department from educational quality assurance institutions.
7. Develop computer department laboratories in line with laboratory quality.
8. Activate mechanisms of mutual cooperation and openness to universities and various educational institutions at the local, regional, and international levels in a manner that includes all components of the educational system.
9. Collaborate with other departments of the college to enter global rankings.

## 4. Program Accreditation

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

## 5. Other external influences

None

## 6. Program Structure

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

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

## 7. Program Description

| Year/Level | Course Code | Course Name | Credit Hours | |
|---|---|---|---|---|
| First | - | Structured Programming | Theoretical | Practical |
| First | - | Logic Design | 2 | 2 |
| First | - | Discrete Structures | 2 | 2 |
| First | - | Computer Architecture and Organization | 2 | - |
| First | - | Mathematics | 2 | 2 |
| First | - | Educational Psychology | 2 | - |
| First | - | Democracy and Human Rights | 2 | - |
| First | - | Arabic Language | 1 | - |
| First | - | Foundations of Education | 1 | - |
| First | - | English Language | 2 | - |
| First | - | Numerical Analysis | 2 | - |
| Second | - | Data Structures and Algorithms | 2 | 2 |
| Second | - | Object-Oriented Programming | 2 | 2 |
| Second | - | Systems Analysis and Database | 2 | 2 |
| Second | - | Computational Theory | 2 | 2 |
| Second | - | Microprocessors | 2 | - |
| Second | - | Educational Management and Secondary Education | 2 | 2 |
| Second | - | Curriculum and Textbook | 2 | - |

| | | | | |
|---|---|---|---|---|
| **Second** | **-** | **Developmental Psychology** | **2** | **-** |
| **Second** | **-** | **English Language** | **2** | **-** |
| **Second** | **-** | **Arabic Language** | **2** | **-** |
| **Second** | **-** | **Crimes of the Baath Party** | **2** | **-** |
| **Third** | **-** | **Artificial Intelligence** | **1** | **-** |
| **Third** | **-** | **Compiler** | **2** | **2** |
| **Third** | **-** | **Computer Graphics** | **2** | **2** |
| **Third** | **-** | **Visual Basic** | **2** | **2** |
| **Third** | **-** | **Computer Architecture** | **2** | **2** |
| **Third** | **-** | **Software Engineering** | **2** | **-** |
| **Third** | **-** | **Counseling and Mental Health** | **2** | **-** |
| **Third** | **-** | **Curriculum and Teaching Methods** | **2** | **-** |
| **Third** | **-** | **Database Design** | **2** | **-** |
| **Fourth** | **-** | **Operating System** | **2** | **2** |
| **Fourth** | **-** | **Computer Networks and Communications** | **2** | **2** |
| **Fourth** | **-** | **Website Design** | **2** | **2** |
| **Fourth** | **-** | **Internet of Things** | **2** | **2** |
| **Fourth** | **-** | **Data Security** | **2** | **2** |
| **Fourth** | **-** | **Project** | **2** | **2** |
| **Fourth** | **-** | **Measurement and Evaluation** | **2** | **-** |
| **Fourth** | **-** | **Practical Education** | **2** | **-** |

## 8. Expected learning outcomes of the program

| **Knowledge** | |
|---|---|
| A1: Technical knowledge in computer science fields<br>A2: Understanding computer systems, understanding the practical applications of information technology<br>A3: Teamwork and communication skills<br>A4: Equipping students with teaching skills, educational guidance, and classroom management | A1: Providing students with deep knowledge in various computer science fields such as programming, databases, information systems, web development, software design, and development. A2: Equipping students with a deep understanding of computer systems and software engineering, including designing and developing large and complex systems. Students should also gain an understanding of the practical applications of information technology in various fields such as education, health, business, and entertainment. A3: Developing students' teamwork and collaboration skills with software development teams, as well as effective communication skills in an information technology work environment. A4: Providing students with necessary information about teaching strategies, methods, and techniques, and equipping them with teaching skills such as planning, implementation, assessment, and time management. |
| **Skills** | |
| B1: Programming skills and software design B2: Web and mobile applications development B3: Database management B4: Proficiency in modern teaching methods | B1: This includes students' ability to write and understand code in various programming languages such as Python, Java, C++, and others. It also involves the ability to solve problems using algorithms. This skill relates to students' ability to analyze user needs and design and develop software that effectively meets those needs. B2: This skill includes students' ability to develop applications, websites, and mobile applications that interact |

| | |
|---|---|
| | effectively with users. B3: Students' ability to design and manage databases using various database management systems such as MySQL, Oracle, MongoDB. B4: Modern teaching methods skills include a variety of strategies and techniques aimed at enhancing the learning experience and promoting student engagement. |
| J1: Adherence to professional ethics J2: Commitment to electronic values J3: Integrity and ethics J4: Knowledge and learning | J1: Students are encouraged to understand and apply professional ethical values in the field of information technology and computer science, such as honesty, respect, responsibility, and protection of privacy and security. J2: Students should refrain from spying on others and maintain the confidentiality of information, and should not harm others by spreading harmful viruses. J3: The program takes care to promote ethical values and integrity in the field of computer science, teaching students the importance of ethical principles and proper conduct in the field of technology. J4: The program enhances the value of knowledge and learning by providing an educational environment that encourages the acquisition of knowledge and the development of skills in various areas of computer science. |

## 9. Teaching and Learning Strategies

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

1- Lecture method supported by technology in learning.
2- Active learning, including problem-solving-based learning.
3- Project-based learning.
4- Cooperative learning.
5- Demonstration experiments method.

## 10. Evaluation methods

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

## 11.Faculty

**Faculty Members**

| Academic Rank | Specialization | | Special Requirements/Skills (if applicable) | | Number of the teaching staff | |
|---|---|---|---|---|---|---|
| | General | Special | | | Staff | Lecturer |
| Assoc.Prof.Dr.Esraa Saleh Hasoon | Computer Science | Network Security | | | √ | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Assoc.Prof.Dr.Baraa Ismail | **Computer Engineering** | **Science and Computer Engineering** | | | √ | |
| Assoc.Prof.Dr.Rawaa Ismail | **Computer Science** | **Information System** | | | √ | |
| Assoc.Prof.Dr.Jamal Khudair | **Computer Science** | **Information and Communication Technology** | | | √ | |
| Assoc.Prof.Iman Khadum | **Computer Science** | **Computer Science** | | | √ | |
| Dr.Ali fhadel | **Computer Science** | **AI** | | | √ | |
| Dr. Jafaar Sadiq Qatief | **Computer Science** | **Computer Networks** | | | √ | |
| Lecturer. Zaman Abood | **Computer Science** | **Computer Science** | | | √ | |
| Lecturer. Manar Bashar Murtatha | **Computer Science** | **Computer Science** | | | √ | |
| **Lecturer. Ammar Awad Kadhum** | **Computer Science** | **Computer Science** | | | √ | |
| **Assist.Lecturer. Abdulhadi Nadhum** | **Computer Science** | **Computer Science** | | | √ | |
| **Assist.Lecturer.Baraa Muhammed** | **Computer Science** | **Computer Science** | | | √ | |
| **Assist.Lecturer. Zahraa Kadhum Ali** | **Computer Science** | **Computer Science** | | | √ | |
| **Assist.Lecturer.Suhad Salman** | **History** | **Modern History** | | | √ | |
| **Assist.Lecturer.Alaa Abdulameer** | **History** | **Islamic Curriculum and Resources** | | | √ | |

## Professional Development

### Mentoring new faculty members

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

### Professional development of faculty members

1- Needs analysis

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

## 12. **Acceptance Criterion**

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

## 13. **The most important sources of information about the program**

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

## 14. Program Development Plan

Implementing programmatic accreditation standards for educational colleges.

## Program Skills Outline

| | | | | Required program Learning outcomes | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year/Level | Course Code | Course Name | Basic or optional | Knowledge | | | | Skills | | | | Ethics | | | |
| | | | | A1 | A2 | A3 | A4 | B1 | B2 | B3 | B4 | C1 | C2 | C3 | C4 |
| First | - | Structured Programming | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| | - | Logic Design | Core | √ | √ | √ | √ | | | | | | | | |
| | - | Discrete Structures | Core | √ | √ | √ | √ | | | | | √ | √ | √ | √ |
| | - | Computer Architecture and Organization | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| | - | Mathematics | Core | | | | | √ | √ | √ | √ | | | | |
| | - | Educational Psychology | Optional | √ | √ | √ | √ | | | | | | | | |
| | - | Democracy and Human Rights | Optional | √ | √ | √ | √ | | | | | | | | |
| | - | Arabic Language | Optional | √ | √ | √ | √ | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | - | **Foundations of Education** | **Optional** | √ | √ | √ | √ | | | | | | | | |
| | - | **English Language** | **Optional** | √ | √ | √ | √ | | | | | | | | |
| **Second** | - | **Numerical Analysis** | **Core** | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| | - | **Data Structures and Algorithms** | **Core** | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| | - | **Object-Oriented Programming** | **Core** | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| | - | **Systems Analysis and Database** | **Core** | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| | - | **Computational Theory** | **Core** | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| | - | **Microprocessors** | **Core** | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| | - | **Educational Management and Secondary Education** | **Optional** | | | | | √ | √ | √ | √ | | | | |
| | - | **Curriculum and Textbook** | **Optional** | | | | | √ | √ | √ | √ | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | - | Developmental Psychology | Optional | | | | | √ | √ | √ | √ | | | | | |
| | - | English Language | Optional | | | | | √ | √ | √ | √ | | | | | |
| | - | Arabic Language | Optional | | | | | √ | √ | √ | √ | | | | | |
| | - | Crimes of the Baath Party | Optional | | | | | √ | √ | √ | √ | | | | | |
| | - | Artificial Intelligence | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | |
| Third | - | Compiler | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | |
| | - | Computer Graphics | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | |
| | - | Visual Basic | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | |
| | - | Computer Architecture | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | |
| | - | Software Engineering | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | |
| | - | Counseling and Mental Health | Optional | √ | √ | √ | √ | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | - | Curriculum and Teaching Methods | Optional | √ | √ | √ | √ | | | | | | | | |
| | - | Database Design | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Fourth | - | Operating System | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| | - | Computer Networks and Communications | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| | - | Website Design | Optional | | | | | | | | | √ | √ | √ | √ |
| | - | Internet of Things | Optional | | | | | | | | | √ | √ | √ | √ |
| | - | Data Security | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| | - | Project | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| | 428CsMe | Measurement and Evaluation | Optional | √ | √ | √ | √ | | | | | | | | |
| | 430CsPe | Practical Education | Core | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |

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

# Description of the First stage course

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| structured programming | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Actual mandatory attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 60 theoretical hours and 60 practical hours | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Responsible for the theoretical and practical course Name: Lecturer. Manar bashar murtatha<br>Email: manar@uowasit.edu.iq<br>Responsible for the practical course Name: BSc. Nooralhuda Lateef<br>Email: nooralhudalateef@gmail.com | |
| 8. Course Objectives | |
| **Course Objectives** | 1. Master the foundational concepts of structured programming paradigms using C++ language syntax.<br>2. Develop proficiency in writing clear, modular, and efficient C++ code following best practices.<br>3. Explore control structures, functions, arrays, and pointers to manipulate data and control program flow.<br>4. Understand the principles of object-oriented programming (OOP) and apply them using classes and inheritance.<br>5. Learn debugging techniques, error handling, and memory management to create robust and reliable C++ programs. |
| 9. Teaching and Learning Strategies | |
| **Strategy** | 1- Using practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Use interactive resources and software applicatio<br>5- Enhancing cooperation and teamwork<br>6- Providing theoretical lessons paralleled by practi applications<br>7- Encouraging self-exploration and continu learning |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
| 1-8 | 4 | Introduction, procedural, programming principles, Algorithms and flowcharts, properties and design, C++ Language Basics (Character set, Identifiers, keywords , Variables, Constants, C++ operators (Arithmetic Operators, Assignment operators, relational operator, comparison and logical operators, bitwise logical operators), type conversion, Statements, getting started with C++, order evaluation. | structured programming | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3- Using the group system to complete mini projects<br>4- Daily questions and discussions |

| | | | | | |
|---|---|---|---|---|---|
| 9-16 | 4 | Selection Statements (Selection Statements, The Single If Statement Structure, The Single If Statement Structure (Blocks), The If/else Statement Structure, Nested If and If/else Statements, else if statement, Switch statement, nested switch, conditional statement | structured programming | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 17-22 | 4 | loop iteration Statements (while Repetition Structure, Do/While Statement, For Statement, More about For Statement, Nested for Loops Break and Continue Control Statements, goto statements). | structured programming | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 23-27 | 4 | Functions (introduction, defining a | structured programming | Theoretical and practical lectures, | 1- Conducting theoretical and practical tests |

| | | | | | |
|---|---|---|---|---|---|
| | | function, return statement, types of functions. actual and formal arguments, local and global variables, recursive functions) Arrays (Array of One Dimension (Declaration of Arrays, Initializing Array Elements, Accessing Array Elements, Read / Write / Process Array Elements) | | practical application in the laboratory, the use of the group system to solve problems, and blended learning | (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 28-30 | 4 | Array of Two Dimension (Declaration of 2D-Arrays, Initializing 2D-Array Elements, Read / Write / Process Array Elements)) String (Read / Write / Process Array Elements, Member Function of | structured programming | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning. | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

| | | | | | |
|---|---|---|---|---|---|
| | | String), Structure, structure within structure Array of structures, functions and structures. | | | |

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

| | |
|---|---|
| 1. Course Name: | |
| Logic circuits | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Actual mandatory attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 60 theoretical hours, 60 practical hours. | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Responsible for the theoretical Name: Dr. Jafar Sadeq Qatif<br>Email: jsadiq@uowasit.edu.iq | |
| 8. Course Objectives | |
| **Course Objectives** | This field includes the analysis and design of digital circuits using logic gates such as inverters, AND gates, OR gates, and others.<br><br>**Understanding Digital Circuits:** Studying logic design enables you to understand how digital circuits function and how data and information are represented using logic gates.<br><br>**Digital Circuit Design** |
| 9. Teaching and Learning Strategies | |
| **Strategy** | 1- Using practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Use interactive resources and software applications<br>5- Enhancing cooperation and teamwork<br>6- Providing theoretical lessons paralleled by practical applications<br>7- Encouraging self-exploration and continuous learning |

10. Course Structure

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

| | | | | | |
|---|---|---|---|---|---|
| 1-8 | 4 | SYSTEMS-decimal 1-Numbers Number-Binary Number-Octal Number-Hexadecimal Number/ | Logic circuits | Theoretical lectures , application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3- Using the group system to complete mini projects<br>4- Daily questions and discussions |
| 9-16 | 4 | Coversions Between system/decimal to Binary Conversion/binary to-decimal Conversion decimal to Octal Conversion/1- Octal to decimal Conversion/-decimal to Hexadecimal Conversion/- Hexadecimal to decimal conversion/-Binary to Octal Conversion/-Octal d to Binary Conversion/-Binary to Hexadecimal Conversion/-Hexadecimal to Binary Conversion/-Octal d to Hexadecimal Conversion/ Arithmetic Operations-Addition in Binary-Addition in octal-Addition in Hexadecimal/-Complements/1's ComplementsInBinary-2' s Complements In Binary/ 1 s and 2 sComplents in decimal/1 s and 2 s Complements in Octal/ 1 s and 2' s Complements in Hexadecimal/Subtraction in Binary/ Multiplication in Binary/- Division in Binary// Signed Number/2-1 Binary coded decimal(BCD)/2-2 Encess | Logic circuits | Theoretical lectures, application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3- Using the group system to complete mini projects<br>4- Daily questions and discussions |

| | | | | | |
|---|---|---|---|---|---|
| 17-22 | 4 | The Gray cod/ Parity binary number/- odd- parity/ even-Parity//3- Boolean Algebra/3-1 Boolean Operation/3-2 Rules and laws of Boolean algebra/3-3 Standard Representation for Logical/ The SOP and the POS/ variable the Karnaugh | Logic circuits | Theoretical lectures, application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 23-27 | 4 | 4-3The Karnaugh Map/ Two-variable the Karnaugh Map/ Three-variable the Karnaugh Map/ Four-varible the Karnaugh Map/ Simplification Karnaugh Map/dont care condition/Design Examples/3-5-1 Half-adder/Full adder/Half subtractor/ Full Subtractor/BCDTO7-SEGENTDECODER/Convert cray to binary/ Convert binary to cray/3-5-8 Parallel adder circuit//4-Flip-Flops/4-1 Flip-Flops R-S/4-2 Flip-FlopsR-S latch/4-3D-type flip-flop/ | Logic circuits | Theoretical lectures, application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 28-30 | 4 | 4J-K-flip Flop/4-5 TOGGLE FF(T_FF)// 5- encoder and Decoder/6- Multiplexers and their use in combinational logic design/7-Read Only Memory (ROM)//8-Counters/8-1 parallel counter/8-2 Other counter//9- Shift Registers/9-1 Introduction/9-2 Serial Shift Registers/9-3 Parallel Shift Registers | Normal logarithm Exponential function there graph Inverse trigonometric function Hyperbolic function polar coordinates | Theoretical lectures, application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | to complete mini projects<br>4-Daily questions and discussions |

11. Course Evaluation

**Grade Distribution out of 100**

Grades are assigned based on the tasks the student is responsible for, such as daily preparation, quizzes, oral and monthly exams, written tests, and reports.

- **30 marks** for exam-based assessments (two tests).
- **5 marks** for daily attendance.
- **5 marks** for daily participation.

12. Learning and Teaching Resources

| | |
|---|---|
| Required textbooks (curricular books, if any) | .L.Floyd Digital Fundamentals_11ed_by_Thomas |
| Main references (sources) | |
| Recommended books and references (scientific journals, reports...) | |
| Electronic References, Websites | |

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| Discrete Structures | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 Yearly | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Actual mandatory attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 60 theoretical hours | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Name: Assist.Lecturer. Esraa Hashim Yahya<br>Email: ealamiri@uowasit.edu.iq | |
| 8. Course Objectives | |
| **Course Objectives** | It is used in the analysis and design of software and computer systems. Here are some benefits and objectives of studying this subject:<br><br>1- Developing Logical and Mathematical Thinking<br>2- Understanding Fundamental Mathematical Structures<br>3- Applications in Programming and Computer Science<br>4- Linguistic Analysis of Algorithms |
| 9. Teaching and Learning Strategies | |
| **Strategy** | 1- **Engage in Lectures and Discussions**<br>Participate in lectures, discussions, and practical activities to enhance learning, including problem-solving sessions, group projects, and programming tasks to apply theoretical concepts practically.<br><br>2- **Utilize Self-Learning Resources**<br>Use self-learning resources such as textbooks, online courses, and tutorials to explore theoretical computation concepts at your own pace, complementing classroom learning for a deeper understanding.<br><br>3- **Practice Problem-Solving Regularly**<br>Consistently solve computational problems and exercises to strengthen problem-solving skills and reinforce theoretical concepts while working on diverse problems to develop versatility in applying different concepts. |

10. Course Structure

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

| | | | | | |
|---|---|---|---|---|---|
| 1-8 | 3 | 1-Mathematical Induction<br>2- Mathematical Logic<br>1-Introduction<br>2-Simple logic statements<br>3-VariableUse In proposition statements<br>4-Compound logic statements<br>5-Logical propositions<br>6-Logical Equivalence<br>7- Tautology statement &contradiction statement 8-Logical Implication<br>9-Algebra of propositions<br>10-Conditional Statements& Variations<br>11-Quantifiers<br>12-Logical Reasoning | Discrete Structures | Blended learning, theoretical lectures, and problem-solving techniques in groups. | 1. Conducting daily and periodic tests.<br>2. Seminars where topics are assigned to students.<br>3. Completing small tasks through group work. |
| 9-16 | 3 | Sets Theory<br>1-Introduction<br>2-Methods of Expressing Sets<br>3-Principle Concepts of Sets<br>4-Venn Diagrams<br>5- Sets of Numbers<br>6-Algebra of sets<br>7- Family of Sets& index Family of Sets<br>8-Ordered Pairs& Products Sets<br>9- Boolean Algebra | Discrete Structures | Blended learning, theoretical lectures, and problem-solving techniques in groups. | 1. Conducting daily and periodic tests.<br>2. Seminars where topics are assigned to students.<br>3. Completing small tasks through group work. |
| 17-22 | 3 | 4- Relations<br>1- Introduction<br>2-Binary Relation<br>3- Graph of the Relation<br>4- Photographer representation of the relations<br>5-The Domain &the Range of a Relation<br>6-Identity Relation &Inverse Relation<br>7- Composition Relation 8-Type of Relation | Discrete Structures | Blended learning, theoretical lectures, and problem-solving techniques in groups. | 1. Conducting daily and periodic tests.<br>2. Seminars where topics are assigned to students.<br>3. Completing small tasks through group work. |

| | | | | | |
|---|---|---|---|---|---|
| | | 9- Equivalence Relations | | | |
| 23-27 | 3 | Functions 1- Introduction 2- Principle Concepts & Definition 3-Models of Functions 4- Composition Function 5-Algebra of Function 6- Discussion Functions through the planned equity 7- Draw Graphs Functions - | Discrete Structures | Blended learning, theoretical lectures, and problem-solving techniques in groups. | 1. Conducting daily and periodic tests.<br>2. Seminars where topics are assigned to students.<br>3. Completing small tasks through group work. |
| 28 -30 | 3 | Vectors and Matrices 1- Introduction 2-Vectors 3-Matrices 4- Models of Square Matrices 5-Algebra in the Matrices 6- Determinant Mathematical Systems and the Groups 1- Introduction 2- Principle Concepts 3-Mathematical Systems 4- Groups 5- Cossets 6- Normal Subgroups 7- Quotient group 8- Homomorphism& Isomorphism | | Blended learning, theoretical lectures, and problem-solving techniques in groups. | 1. Conducting daily and periodic tests.<br>2. Seminars where topics are assigned to students.<br>3. Completing small tasks through group work. |

| 11. Course Evaluation |
|---|
| **Grade Distribution out of 100**<br><br>Grades are assigned based on the student's tasks, including daily preparation, quizzes, oral, monthly, and written exams, as well as reports.<br><br>• **30 marks** for subject exams (two tests).<br>• **5 marks** for daily attendance.<br>• **5 marks** for daily participation. |

| 12. Learning and Teaching Resources | |
|---|---|
| Required textbooks (curricular books, if any) | |
| Main references (sources) | |
| Recommended books and references (scientific journals, reports...) | |
| Electronic References, Websites | |

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| **Computer Organization** | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| **2024/2025** | |
| 4. Description Preparation Date: | |
| **10/11/2024** | |
| 5. Available Attendance Forms: | |
| **Actual mandatory attendance** | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| **2 theoretical hours per week** | |
| 7. Course administrator's name (mention all, if more than one name) | |
| **Course Instructor: Dr. Ali Fadhil Rashid**<br>**Email: alirashid@uowasit.edu.iq** | |
| 8. Course Objectives | |
| **Course Objectives** | This academic curriculum is a basic introduction to knowledge of the computer system. The student will learn the main elements of a computer system. Such as introduction to computer science, basic concepts in computer science, definition of computer, classification of computers, development or generations, parts of the computer system including hardware and software. The curriculum aims to:-<br>1. The goal required of the student to successfully pass the course requirements is the student's awareness and understanding of the computer system.<br>**2.** Distinguish between hardware and software. |
| 9. Teaching and Learning Strategies | |
| **Strategy** | 1. Giving lectures by giving logical explanations of the topic being taught.<br>2. Class participation through preparing reports related to the subject and discussing them. |
| 10. Course Structure | |

| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
|---|---|---|---|---|---|
| 1. | 2 | | **hardware** | theoretical | Discussion/questions and answers |
| 2. | 2 | | **Representing data in a computer** | theoretical | Discussion/questions and answers |
| 3. | 2 | | **Input and output units** | theoretical | Discussion/questions and answers |
| 4. | 2 | | **Software** | theoretical | Discussion/questions and answers |
| 5. | 2 | | **Networks** | theoretical | Discussion/questions and answers |
| 6. | 2 | | **Information technology in our daily life** | theoretical | Discussion/questions and answers |
| 7. | 2 | | **Security and protection** | theoretical | Discussion/questions and answers |
| 8. | 2 | | **Exam** | | Questions |
| 9. | 2 | | **Legal issues** | theoretical | Discussion/questions and answers |
| 10. | 2 | | **Windows** | theoretical | Discussion/questions and answers |
| 11. | 2 | | **start menu** | theoretical | Discussion/questions and answers |
| 12. | 2 | | **control Panel** | theoretical | Discussion/questions and answers |
| 13. | 2 | | **Install and uninstall programs** | theoretical | Discussion/questions and answers |
| 14. | 2 | | **Create folders** | theoretical | Discussion/questions and answers |
| 15. | 2 | | **anti-virus** | theoretical | Discussion/questions and answers |
| 16. | 2 | | **Exam** | theoretical | Questions |
| 17. | 2 | | **Microsoft Word 2010** | theoretical | Discussion/questions and answers |

| | | | | | |
|---|---|---|---|---|---|
| 18. | 2 | | **Insert text into the document** | theoretical | Discussion/questions and answers |
| 19. | 2 | | **Text formatting** | theoretical | Discussion/questions and answers |
| 20. | 2 | | **Tables** | theoretical | Discussion/questions and answers |
| 21. | 2 | | **Header and footer** | theoretical | Discussion/questions and answers |
| 22. | 2 | | **page numbering** | theoretical | Discussion/questions and answers |
| 23. | 2 | | **Insert an image** | theoretical | Discussion/questions and answers |
| 24. | 2 | | **Design tab** | theoretical | Discussion/questions and answers |
| 25. | 2 | | **References tab** | theoretical | Discussion/questions and answers |
| 26. | 2 | | **Correspondence tab** | theoretical | Discussion/questions and answers |
| 27. | 2 | | **Preview and print the document** | theoretical | Discussion/questions and answers |
| 28. | 2 | | **Spelling and grammatical errors** | theoretical | Discussion/questions and answers |
| 29. | 2 | | **Prepare a report** | theoretical | Discussion/questions and answers |
| 30. | 2 | | **Exam** | theoretical | Questions |

## 11.Course Evaluation

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

*Semester/30%
*Daily preparation, activities and attendance/10%
*Final exam/60%

| 12.Learning and Teaching Resources | |
|---|---|
| Required textbooks (curricular books, if any) | Computer Organization |
| Main references (sources) | Basic computer and software skills |
| Recommended books and references (scientific journals, reports...) | |
| Electronic References, Websites | |

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| English language | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Actual mandatory attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 30 theoretical hours, 2 units. | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Name: Assistant Lecturer Nagham Fadhil Hussein<br>Email: nahussain@uowasit.edu.iq | |
| 8. Course Objectives | |
| Course Objectives | 1- To enrich the students' knowledge about English language<br>2- Improve students' ability in listening, speaking, reading and writing<br>3-Mak the students feel with the English language in their study |
| 9. Teaching and Learning Strategies | |
| **Strategy** | Discussion and ask questions, giving the chance to students to participate by speaking, reading and translation. |
| 10. Course Structure | |

| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
|---|---|---|---|---|---|
| 1-8 | 8 | Acquiring knowledge in the field of social behavior, such as greetings and introductions.<br><br>Recognizing surrounding objects, such as phone numbers, addresses, and some cities.<br><br>Introducing basic concepts like personal profiles and work.<br><br>Learning ways to express ownership.<br><br>Review. | Unit one: Hello<br><br>Unit 2: your world<br><br>Unit3: All about you<br><br>Unit4: family and friends<br>Exercises and solutions | | Examinations and daily activity |
| 9-16 | 8 | Identifying nationalities and famous products of each country.<br>Introduction to the simple present tense.<br>Time management and learning preferences in food and drinks.<br>Review.<br>Using pronouns and question words. | Unit 5: The way live<br><br>Unit 6: Every day<br><br>Exercises and solutions<br>Unit 7: My favorites | | Examinations and daily activity |
| 17-22 | 6 | Familiarization with housing, parts of the house, and furniture.<br><br>Introduction to the simple past | Unit 8: Where I live<br><br>Unit 9: Times past<br><br>Unit 10: We had a great time | | Examinations and daily activity |

| | | | | | |
|---|---|---|---|---|---|
| | | tense and reading history.<br><br>The importance of completing tasks and responsibilities. | | | |
| 23-27<br><br>28-30 | 5<br><br>3 | Review.<br><br>Expressing the ability to perform tasks.<br><br>Using the present continuous tense.<br><br>Expressing the use of transportation.<br><br>Expressing behaviors in useful sentences. | Exercises and solutions<br><br>Unit 11: I can do that<br><br>Unit:12 Please and thank you<br><br>Unit 13: Here and now<br><br>Unit 14: It's times to go<br><br>Exercise and solution | | Examinations and daily activity<br><br>Examinations and daily activity |

## 11.Course Evaluation

- **Annual Assessment:** 40 marks, divided as follows:
  - 30 marks for midterm exams.
  - 10 marks for participation, attendance, activities, and assignments.
- **Final Exam:** 60 marks.

## 12.Learning and Teaching Resources

| | |
|---|---|
| Required textbooks (curricular books, if any) | New Headway Pulse for Pre-Intermediate, John and Liz Soars, Oxford |
| Main references (sources) | |
| Recommended books and references (scientific journals, reports...) | There's none |
| Electronic References, Websites | There's none |

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| Democracy and Human Rights | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024/2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Mandatory in-person attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 30 theoretical hours | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Instructor: M.M. Alaa Abdulameer Mohammed<br>Email: alaamohammed@uowasit.edu.iq | |
| 8. Course Objectives | |
| **Course Objectives** | • Enhance students' understanding of the conceptual and theoretical aspects and historical development of human rights and democracy.<br>• Develop students' analytical and critical skills regarding the reality and future of human rights and democracy.<br>• Train students on the importance of active participation in public life, including respecting human rights principles and engaging in political and cultural life.<br>• Enable students to understand the significance of education in promoting human rights and democracy, contributing to the development of a civilized society based on good governance, human rights, education, and fair, free elections. |
| 9. Teaching and Learning Strategies | |

| | |
|---|---|
| **Strategy** | • Delivering lectures by providing logical explanations of the topics being taught.<br>• Classroom participation through the preparation and discussion of subject-related reports.<br>• Analyzing specific human rights issues. |

## 10. Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
|---|---|---|---|---|---|
| 1st - 2nd | 1 | Introduction to the concept of human rights | Human Rights | Theoretical | Discussion / Q&A |
| 3rd – 4th | 1 | Defining the concept and characteristics of human rights | Human Rights | Theoretical | Discussion / Q&A |
| 5th – 6th | 1 | Historical development of the concept of human rights | Human Rights | Theoretical | Discussion / Q&A |
| 7th – 8th | 1 | Contents of human rights | Human Rights | Theoretical | Discussion / Q&A |
| 9th – 10th | 1 | Human rights in Greek civilization | Human Rights | Theoretical | Discussion / Q&A |
| 11th – 12th | 1 | Human rights in Islamic thought | Human Rights | Theoretical | Discussion / Q&A |
| 13th – 14th | 1 | Promotion of human rights (mechanisms and procedures) | Human Rights | Theoretical | Discussion / Q&A |
| 15th – 16th | 1 | Comparison between human rights in Islam and in legal documents | Human Rights | Theoretical | Discussion / Q&A |
| 17th – 18th | 1 | Basic rights and acquired rights | Human Rights | Theoretical | Discussion / Q&A |
| 19th – 20th | 1 | Universal Declaration of Human Rights | Human Rights | Theoretical | Discussion / Q&A |
| 21st | 1 | First semester exam | Human Rights | Theoretical | Discussion / Q&A |
| 22nd - 23rd | 1 | Historical development of the concept of democracy | Democracy | Theoretical | Discussion / Q&A |
| 24th – 25th | 1 | Forms of democracy | Democracy | Theoretical | Discussion / Q&A |
| 26th | 1 | Features and components of the democratic system | Democracy | Theoretical | Discussion / Q&A |
| 27th | 1 | Concept of elections and their legal adaptation | Democracy | Theoretical | Discussion / Q&A |
| 28th | 1 | Second semester exam | Democracy | Theoretical | Discussion / Q&A |

## 11.Course Evaluation

Distribution of the grade out of 100 based on student tasks, such as daily preparation, daily, oral, monthly, and written exams, discussion and evaluation of research papers, etc.:

- **Semester Work:** 30%
- **Daily Preparation, Activities, and Attendance:** 10%
- **Final Exam:** 60%

## 12.Learning and Teaching Resources

| | |
|---|---|
| Required textbooks (curricular books, if any) | Hadi Riyadh Aziz / Human Rights (Development - Contents - Protection) |
| Main references (sources) | Al-Sindi Naz Badirkhan / Human Rights and Democracy |
| Recommended books and references (scientific journals, reports...) | |
| Electronic References, Websites | Hafidh Alwan Al-Dulaimi / A Contemporary Reading on the Topic of Human Rights |

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| Arabic language | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 2024-11-10 | |
| 5. Available Attendance Forms: | |
| Actual mandatory attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 30 hours | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Name: Kawthar Qasim Sahn<br>Email: kqasim@uowasit.edu.iq | |
| 8. Course Objectives | |
| **Course Objectives** | It aims to contribute to the formation of teachers who have competence, ability, good linguistic and scientific performance, and active scientific practice. |
| 9. Teaching and Learning Strategies | |
| **Strategy** | - Introducing the student to the correct Arabic language words, their correct structures and methods in an interesting and attractive way.<br>- Enabling the student to read correctly, and to acquire the ability to use the language correctly in communicating with |

| | |
|---|---|
| | others, such as speed, quality of delivery, and good expression. |

10. Course Structure

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

| | | | | | |
|---|---|---|---|---|---|
| 30 -28 | 1 | The student senses the beauty of the words in these texts and their meanings | Poetic texts<br>For the jeweler | Explanation and discussion | Exams and daily discussi on |

## 11- Course Evaluation

- **Daily Discussions** to assess students' understanding.
- **Daily Quizzes** with various short scientific questions to evaluate their comprehension of the material and provide an assessment of daily participation.
- **Instant Participation Requests** from students.
- **Daily and Monthly Exams** for the course material, along with a final exam.

## 12- Learning and Teaching Resources

| | |
|---|---|
| Required textbooks (curricular books any) | **General Arabic for Non-Specialists** by Dr. Kazem Hamad Muhrath |
| Main references (sources) | **The Arabic Language, Learning Grammar Rules, and Literature** by Sadeq Ismail Hafiz |
| Recommended books and references (scientific journals, reports...) | |
| Electronic References, Websites | |

# Course Description Form

| 1. Course Name: |
|---|
| Educational and developmental psychology |
| 2. Course Code: |
| |
| 3. Semester / Year: |
| 2025/3/11 |
| 4. Description Preparation Date: |
| |
| 5. Available Attendance Forms: |
| |
| 6. Number of Credit Hours (Total) / Number of Units (Total) : |
| 2 hours/4 units |
| 7. Course administrator's name (mention all, if more than one name) |
| Name: Nisreen Nasser Khalaf<br>Email: nisreenkhalaf@uowasit.edu.iq |
| 8. Course Objectives |

| **Course Objectives** | |
|---|---|

| 9. Teaching and Learning Strategies | |
|---|---|
| **Strategy** | Lecture and discussion<br>Dialogue and interrogation |

10. Course Structure

| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
|---|---|---|---|---|---|
| 1<br>2<br>3 | 2 | Knowledge | Educational Psychology | Lecture and discussion | Today's oral and |

| | | | | | |
|---|---|---|---|---|---|
| | | | Definition and Objectives Educational, Teaching and Behavioral Objectives Learning and Learning Factors | | written exam |
| 5<br>6 | | Knowledge | Thinking Perception Intelligence | Lecture and discussion | Today's oral and written exam |
| 7<br>8<br>9 | 2 | Knowledge | Attention Intelligence Motivation | Lecture and discussion | Today's oral and written exam |
| 10<br>11 | 2 | Knowledge | Memory and forgetting Schools of psychology | Lecture and discussion | Today's oral and written exam |
| 12<br>13<br>14 | 2 | Knowledge | Growth and Maturity Adolescence Adolescent Physical Development | Lecture and discussion | Today's oral and written exam |
| 15<br>16<br>17 | 2 | Knowledge | Cognitive development of adolescents Social and emotional development of adolescents Moral development of adolescents | Lecture and discussion | Today's oral and written exam |
| 18<br>19 | 2 | Knowledge | Adolescents and Society Parenting Styles | Lecture and discussion | Today's oral and written exam |
| 20<br>21 | 2 | Knowledge | Teenage Problems Trends | Lecture and discussion | Today's oral and written exam |

| | | | | | |
|---|---|---|---|---|---|
| 22<br>23 | 2 | Knowledge | Concept of ethics<br>Concept of profession | Lecture and discussion | Today's oral and written exam |
| 24<br>25 | 2 | Knowledge | The concept of professional ethics<br>Teacher ethics | Lecture and discussion | Today's oral and written exam |
| 26<br>27 | | Knowledge | School Principal<br>Ethics<br>Leadership | Lecture and discussion | Today's oral and written exam |
| 28 | 2 | Knowledge | Leadership Theories | Lecture and discussion | Today's oral and written exam |
| 29<br>30 | 2 | Knowledge | Career Compatibility<br>Job Satisfaction<br>The teacher in the era of globalization | Lecture and discussion | Today's oral and written 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) | Educational Psychology and Developmental Psychology Book |
| Main references (sources) | Educational Psychology: Dr. Abdul Aziz Nashawati, Dar Al Furqan.<br>Educational Psychology: Raouf Mahmoud Al Qaisi, Amman, Jordan / Dar Dijlah.<br>Childhood and Adolescent Psychology: Amina Ali Khan<br>Ethics of the Teaching Profession: Dr. Nafeth Suleiman Al Jaab 2018<br>Ethics of the Teaching Profession: Dr. Qadriya Muhammad Al Bishri 2011 |

| | |
|---|---|
| Recommended books and references (scientific journals, reports…) | |
| Electronic References, Websites | |

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| Principles of Education and Teaching | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| In-person | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 1 Hour 2 Units | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Name: M.M. Ruya Hasib Hassan<br>Email: roya.alobedi@gmail.com | |
| 8. Course Objectives | |
| Course Objectives | • Enhancing students' understanding of the educational and social realities throughout history and recognizing the educational journey in its essential aspects.<br>• Understanding educational theories across different civilizations, both ancient and modern.<br>• Interpreting the educational process from historical and philosophical perspectives.<br>• Shedding light on upbringing and education.<br>• Highlighting the importance of educational and social institutions and helping students develop an appreciation for the educational process.<br>• Describing and explaining the impact of educational systems on historical realities, both past and present.<br>• Identifying educational realities as revealed by philosophical schools of education.<br>• Defining societal educational goals and applying educational concepts. |
| 9. Teaching and Learning Strategies | |

| | |
|---|---|
| Strategy | • Utilizing educational discussions (educational dialogue) that rely on exchanging ideas to reach conclusions.<br>• Using modern technologies (computers). |

10. **Course Structure**

| Week | Hours | Required Learning Outcomes | Unit or Topic Name | Learning Method | Assessment Method |
|---|---|---|---|---|---|
| 1-8 | 2 | Chapter One | - Meaning and Objectives of Education - Theories and Fields of Education - Historical Foundations of Education - Ancient Education - Chinese Education - Greek Education - Medieval Education - Arab Education Before and After Islam | In-person | Assigning daily homework and checking daily attendance |
| 9-16 | 2 | Chapter Two | - Modern Education - Relationship Between Education and Society - Relationship Between Individual and Environment - Moral Education - | In-person | Assigning daily homework and checking daily attendance |

| Week | Hours | Required Learning Outcomes | Unit or Topic Name | Learning Method | Assessment Method |
|---|---|---|---|---|---|
| | | | Family Education - National Education - Health Education - Education and its Impact on Economic Development | | |
| 17-22 | 2 | Chapter Three | - Education and Curriculum in Research - National and Social Foundations - Education from a Social Perspective - Comprehensive School - Methodological Education | In-person | Assigning daily homework and checking daily attendance |
| 23-27 | 2 | Chapter Four | - Teaching Methods in Islamic Education - Islamic Educational Thought - Educational and Teaching Rights in the Views of the Prophet's Household - Teachers' Rights in Islam - Ibn Khaldun | In-person | Assigning daily homework and checking daily attendance |
| 28-30 | 2 | Chapter Five | - Ibn Sina - Learners' Rights - Educational Thought - Social and | In-person | Assigning daily homework and checking daily attendance |

| Week | Hours | Required Learning Outcomes | Unit or Topic Name | Learning Method | Assessment Method |
|---|---|---|---|---|---|
| | | | Economic Foundations - Main Functions of Schools - Scientific Foundations of Education and Teaching - Importance of Historical Research in Educational Fields | | |

| 11. Course Evaluation | |
|---|---|
| Grades are distributed out of 100 based on student tasks, including daily preparation, quizzes (oral, written, and monthly tests), and reports. | |
| 12. Learning and Teaching Resources | |
| Required textbooks (methodology) | • Principles of Education |
| Main references (sources) | • Principles of Education, Assistant Professor Ali Abdul Karim |
| Recommended supporting books and references (scientific journals, reports ...) | |
| Electronic references, Internet sites | |

# Course Description Form

| |
|---|
| 1. Course Name: |
| Mathematics |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| Mandatory physical attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 60 hours theoretical |
| 7. Course administrator's name (mention all, if more than one name) |
| **Course Responsible (Theoretical):** Assistant Lecturer Masar Faseeh Jabar<br>**Email:** majabbar@uowasit.edu.iq |
| 8. Course Objectives |

| | |
|---|---|
| Course Objectives | 1. The objective of Mathematics is to empower the learner in research, interpretation, and the ability to make sound decisions based on a solid foundation of measurement, prediction, risk calculation, and the estimation of success and failure probabilities.<br>2. It aims to equip the learner with mathematical skills that enable them to work in the field of economics.<br>3. Mathematics aims to intertwine and integrate with all types of sciences and knowledge. The instructors aim to prepare students to form relationships between all scientific fields, ensuring that no aspect is studied in isolation.<br>4. The goal of Mathematics is to develop and enhance methods and approaches to thinking, as well as how to approach and solve various problems. |

| 9. Teaching and Learning Strategies | |
|---|---|
| Strategy | 1. Employing practical examples<br>2. Project-based learning<br>3. Discussions and active idea exchange<br>4. Using interactive resources and software applications<br>5. Enhancing collaboration and teamwork<br>6. Offering parallel theoretical lessons with practical applications<br>7. Encouraging self-exploration and continuous learning |

10. **Course Structure**

| Week | Hours | Required Learning Outcomes | Unit or Topic Name | Learning Method | Assessment Method |
|---|---|---|---|---|---|
| 1-8 | 3 | Introduction, Function, Kinds of Functions & Their Graphs, Limit, Continuity, Derivative, Finites | Mathematics | Theoretical lectures, use of summation systems to solve problems, blended learning | 1. Theoretical exams (daily & semester)<br>2. Seminars (assigning topics to students)<br>3. Use of summation systems to complete mini-projects<br>4. Daily questions and discussions |
| 9-16 | 3 | Derivative by Definition, Derivative by Higher Order, Chain Rules, Application of Derivatives, Sequences & Series, Taylor & Maclaurin Series | Mathematics | Theoretical lectures, use of summation systems to solve problems, blended learning | 1. Theoretical exams (daily & semester)<br>2. Seminars (assigning topics to students)<br>3. Use of summation systems to complete mini-projects<br>4. Daily questions and discussions |
| 17-22 | 3 | Integration, Integral, Definite Integral, Introduction to Differential Equations, Special Functions (Gamma, Beta, Error) | Mathematics | Theoretical lectures, use of summation systems to solve problems, blended learning | 1. Theoretical exams (daily & semester)<br>2. Seminars (assigning topics to students)<br>3. Use of summation systems to complete mini-projects<br>4. Daily questions and discussions |
| 23-27 | 3 | Fourier Series, Fourier Transforms (Ft), Discrete Fourier Transform (DFT), Relations, Properties of (Ft), Fast Fourier | Mathematics | Theoretical lectures, use of summation systems to solve problems, | 1. Theoretical exams (daily & semester)<br>2. Seminars (assigning topics to students)<br>3. Use of summation systems to complete mini-projects<br>4. Daily questions and discussions |

| Week | Hours | Required Learning Outcomes | Unit or Topic Name | Learning Method | Assessment Method |
|---|---|---|---|---|---|
| | | Transforms, Natural Logarithm | | blended learning | |
| 28-30 | 3 | Normal Logarithm, Exponential Function, Trigonometric Functions & Their Graphs, Inverse Trigonometric Functions, Hyperbolic Functions, Polar Coordinates | Mathematics | Theoretical lectures, use of summation systems to solve problems, blended learning | 1. Theoretical exams (daily & semester)<br>2. Seminars (assigning topics to students)<br>3. Use of summation systems to complete mini-projects<br>4. Daily questions and discussions |

| 11. Course Evaluation | |
|---|---|
| • The annual effort is 40 marks, divided into 30 marks for semester exams (at least two exams per semester) and 10 marks for participation, attendance, activities, and reports.<br><br>• The final exam is 60 marks. | |
| 12. Learning and Teaching Resources | |
| Required textbooks (methodology) | • Strang, Gilbert. *Calculus*. Vol. 1. SIAM, 1991. |
| Main references (sources) | |
| Recommended supporting books and references (scientific journals, reports ...) | |
| Electronic references, Internet sites | |

# Description of the second stage course

# Course Description Form

| |
|---|
| 1. Course Name: |
| numerical analysis |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 60 theoretical hours, 60 practical hours. |
| 7. Course administrator's name (mention all, if more than one name) |
| Responsible for the theoretical Name: teacher Muhammad Ali<br>Email: mwannas@uowasit.edu.iq |
| 8. Course Objectives |

| | |
|---|---|
| **Course Objectives** | • Acquiring students' knowledge of the principles of numerical analysis.<br>• Gaining skills in using computer programs.<br>• Acquiring skills that enable students to teach mathematics. |
| 9. Teaching and Learning Strategies | |
| **Strategy** | |

**10. Course Structure**

| Week | Hours | Learning Outcomes | Unit/Topic Name | Learning Method | Evaluation method |
|---|---|---|---|---|---|
| 1-3 | 4 | Numerical Analysis: What is it? Floating-point numbers and roundoff errors Errors: Sources of error in numerical computation | **Introduction** | Lecture Notes You tube | Daily exams Assignments Monthly exams |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Learning Outcomes** | **Unit/Topic Name** | **Learning Method** | **Evaluation method** |
| 4-6 | 4 | Absolute and relative errors Stable and unstable computations: Conditioning. **Solving systems of linear Equations** LU and Cholesky factorizations. Pivoting and constructing an algorithm. | **Solving systems of linear Equations** | Lecture Notes You tube | Daily exams Assignments Monthly exams |
| 7 | 4 | Neuman series and iterative refinement Norms of matrix and vectors. | **Solution of Nonlinear equations** | Lecture Notes You tube | Daily exams Assignments Monthly exams |
| 8-10 | 4 | Solution of equations by iterative methods (i) Jacobi method (ii) Gauss-Siedel method | **Solution of Nonlinear equations** | Lecture Notes You tube | Daily exams Assignments Monthly exams |
| 11-13 | 4 | **Solution of Nonlinear equations** Bisection method. False-position method. Newton's Method. Secant method. Fixed points and functional iteration. Acceleration of a fixed point. | **systems of nonlinear Equations** | Lecture Notes You tube | Daily exams Assignments Monthly exams |
| 14-16 | 4 | **systems of nonlinear Equations** Fixed point method. | **Interpolation** | Lecture Notes You tube | Daily exams Assignments Monthly exams |
| 17-28 | 4 | Newton method. Modified Newton method **Interpolation** Finite difference operators Newton forward difference interpolation formula | **Numerical Differentiation and integration** **Numerical Solution of Ordinary Differential Equations** | Lecture Notes You tube | Daily exams Assignments Monthly exams |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Learning Outcomes** | **Unit/Topic Name** | **Learning Method** | **Evaluation method** |
| | | Newton backward difference interpolation formula<br>Besiel interpolation formula<br>Polynomial interpolation (Lagrange interpolation)<br>Divided differences<br>Spline (degree one, two and three) interpolation<br>Least square theory (discrete and continuous)<br>**Numerical Differentiation and integration**<br>Numerical differentiation<br>Numerical integration based on interpolation<br>**Numerical Solution of Ordinary Differential Equations**<br>Existence and uniqueness of solutions<br>Taylor-series method<br>Runge-Kutta methods<br>Multistep methods<br>**Euler method**<br>**Modified Euler** | | | |

| 11- Course Evaluation | |
|---|---|
| Grade Distribution out of 100 Grades are assigned based on the tasks the student is responsible for, such as daily preparation, daily exams, oral exams, monthly exams, written exams, and reports, etc. | |
| **12- Learning and Teaching Resources** | |
| Required textbooks (curricular books, if any) | Book on Numerical Analysis |
| Main references (sources) | Numerical Analysis |
| Recommended books and references (scientific journals, reports...) | Numerical Analysis with Matlab programming |
| Electronic References, Websites | https://atozmath.com/ |

# Course Description Form

| |
|---|
| 1. Course Name: |
| data structures and algorithm |
| 2. Course Code: |
| |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 60 theoretical hours and 60 practical hours |
| 7. Course administrator's name (mention all, if more than one name) |
| Responsible for the theoretical and practical course Name: **Dr. Jaafar Sadiq Qateef**<br>Email: jsadiq@uowasit.edu.iq |
| 8. Course Objectives |

| | |
|---|---|
| **Course Objectives** | **1 - The student can choose the appropriate method for sorting and searching data according to the size and arrangement of the data.**<br>**2 - The student acquires skills in different ways of storing data in computer memory and dealing with it.**<br>**3- Learn how to represent data linearly and non-linearly. Learns how to choose the optimal algorithm To solve a problem based on time and amplitude analysis.**<br>**4 - Practical application of algorithms, how to deal with data, and sorting methods.** |

| | |
|---|---|
| 9. Teaching and Learning Strategies | |
| **Strategy** | 1- Using practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Use interactive resources and software applications<br>5- Enhancing cooperation and teamwork<br>6- Providing theoretical lessons paralleled by practical applications<br>7- Encouraging self-exploration and continuous learnir |
| 10. Course Structure | |

| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
|---|---|---|---|---|---|
| 1-8 | 4 | Introduction to data structure<br>Benefits of data structures<br>Types of data structures<br>How to select the suitable data structure<br>Representation element in one dimensional array<br>Representation element in two dimensional array<br>Representation element in array with structures | data structures and algorithm | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3- Using the group system to complete mini projects<br>4- Daily questions and discussions |
| 9-16 | 4 | Stack : definition ,operations and algorithms<br>Array representation of stack<br>record implementation of stack<br>Queue: definition,operations, and algorithms<br>Array representation of Queue | data structures and algorithm | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3- Using the group system to complete mini projects<br>4- Daily questions and discussions |
| 17-22 | 4 | record implementation of Queue<br>Circular queue: definition ,operations, and algorithms<br>Array representation of Circular Queue<br>recod implementation of Circular Queue<br>Linked structures: sequential & dynamic storage Allocation | data structures and algorithm | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3- Using the group system |

| | | | | | |
|---|---|---|---|---|---|
| | | Linked list: definition,operations, and algorithms | | | to complete mini projects<br>4- Daily questions and discussions |
| 23-27 | 4 | Linked Stack &Queue<br>Double linked list Half-Year Break<br>Graphs: Directed graphs Undirected graphs<br>Trees: Types of trees and its algorithms | data structures and algorithm | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 28-30 | 4 | Transfer binary tree to ordinary tree & vise versa<br>Transfer mathematical expression to binary tree & vise versa<br>Tree representation<br>Searching algorithm : sequential &binary search<br>Sorting algorithms : bubble,insertion,quick,and hashing storing | data structures and algorithm | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussis |

## 11.Course Evaluation

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

## 12.Learning and Teaching Resources

| | |
|---|---|
| Required textbooks (curricular books, if any) | Data Structures and Algorithms Made Easy: Data Structures and Algorithmic Puzzles |
| Main references (sources) | Data Structures and Algorithms with C++: 100+ Coding Q&A (Code of Code) |
| Recommended books and references (scientific journals, reports...) | Data Structure and Algorithmic Thinking with Python |
| Electronic References, Websites | |

# Course Description Form

| 1. Course Name: |
|---|
| Object Oriented Programming |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 2024-11-10 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 60 theoretical hours, 60 practical hours. |
| 7. Course administrator's name (mention all, if more than one name) |

**Theoretical Course Coordinator:**

- **Name:** Assistant Professor Iman Kazem Ajlan
- **Email:** eajlan@uowasit.edu.iq

**Practical Course Coordinator:**

- **Name:** Lecturer Abdulhadi Nazem Mohsen
- **Email:** abd_mohsen@uowasit.edu.iq

| 8. Course Objectives | |
|---|---|
| **Course Objectives** | Design and write programs in object oriented programming style which depend on object oriented programming features and concepts and introduce C++ as an object-oriented programming language. |

| 9. Teaching and Learning Strategies | |
|---|---|
| **Strategy** | 1- **Applying Practical Examples**<br>2- **Project-Based Learning**<br>3- **Discussions and Effective Idea Exchange**<br>4- **Using Interactive Resources and Software Applications**<br>5- **Enhancing Collaboration and Teamwork**<br>6- **Delivering Theoretical Lessons Alongside Practical Applications**<br>7- **Encouraging Self-Exploration and Continuous Learning** |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
| 1 | 4 | C++ Program to write functions and inline function with parameter transmission | Overview for functions and parameter transmission, inline functions | Theoretical lecture and practical laboratory | Quiz |
| 2 | 4 | C++ Program to deal with function overloading and default arguments | function overloading and default arguments | Theoretical lecture and practical laboratory | Solve laboratory exercises |
| 3 | 4 | | Introduction to OOP and its main features | Theoretical lecture and practical laboratory | Solve laboratory exercises |
| 4 | 4 | OO Program to define a Simple Class | Defining a Simple Class | Theoretical lecture and practical laboratory | Quize |
| 5 | 4 | Exam 1 | | | |
| 6 | 4 | OO Program to define a Class with Inline Member Functions | Defining a Simple Class, with inline Member Functions | Theoretical lecture and practical laboratory | Solve laboratory exercises |

| | | | | | |
|---|---|---|---|---|---|
| 7 | 4 | OO Programs deal with Constructors and destructors functions | Constructors and destructors functions | Theoretical lecture and practical laboratory | Solve laboratory exercises |
| 8 | 4 | OO Program to write Friends functions | Friends concept | Theoretical lecture and practical laboratory | Solve laboratory exercises |
| 9 | 4 | OO Program to write Friend class | Friend class | Theoretical lecture and practical laboratory | Quiz |
| 10 | 4 | Exam 2 | | | |
| 11 | 4 | OO Program deals with Constant Members and Scope Operator, | Constant Members and Scope Operator, | Theoretical lecture and practical laboratory | Solve laboratory exercises |
| 12 | 4 | OO Program deals with Member Initialization List, and Static members | Member Initialization List methods and Static members | Theoretical lecture and practical laboratory | Solve laboratory exercises |
| 13 | 4 | OO Program deals with pointers to objects and reference members | Pointers to objects and reference members | Theoretical lecture and practical laboratory | Quiz |

| | | | | | |
|---|---|---|---|---|---|
| 14 | 4 | OO Program to write Class object members | Class object members | Theoretical lecture and practical laboratory | presentation |

## 11- Course Evaluation

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

## 12- Learning and Teaching Resources

| | |
|---|---|
| Required textbooks (curricular books, if any) | |
| Main references (sources) | |
| Recommended books and references (scientific journals, reports...) | |
| Electronic References, Websites | |

# Course Description Form

| |
|---|
| 1. Course Name: |
| System Analysis & Database |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 60 theoretical hours and 60 practical hours |
| 7. Course administrator's name (mention all, if more than one name) |
| **Theoretical and Practical Course Coordinator:**<br>• **Name:** Associate Professor Dr. Bara'a Ismail Farhan<br>• **Email:** bfarhan@uowasit.edu.iq |
| 8. Course Objectives |

| | |
|---|---|
| **Course Objectives** | 1. **Understanding Fundamental Concepts:** Introducing students to system analysis and database design concepts, including design patterns, system requirements, and how to develop effective data models.<br>2. **Utilizing Analysis Tools:** Teaching students how to use system analysis tools and techniques such as diagramming tools, Data Flow Diagrams (DFD), and Entity-Relationship Diagrams (ERD) to effectively understand and represent system requirements.<br>3. **Database Design:** Equipping students with the necessary skills to design databases comprehensively, including organizing and storing data efficiently and systematically.<br>4. **Developing SQL Skills:** Teaching students how to use SQL (Structured Query Language) to create, update, and query databases effectively.<br>5. **Performance Analysis and Optimization:** Understanding how to analyze and enhance database performance using techniques like indexing and optimization to ensure optimal database system functionality. |

| 9. Teaching and Learning Strategies | |
|---|---|
| **Strategy** | 1- Using practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Use interactive resources and software applications<br>5- Enhancing cooperation and teamwork<br>6- Providing theoretical lessons paralleled by practical applications<br>7- Encouraging self-exploration and continuous learning |

10. Course Structure

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

| | | | | | |
|---|---|---|---|---|---|
| | | | | | to complete mini projects 4-Daily questions and discussions |
| 23-27 | 4 | • Composite key in DBMS<br>• Candidate Key in DBMS<br>• ER diagram consists of<br>• - Entity sets.<br>• -Relationship sets.<br>• Many-to-many:<br>• One-to-many:<br>• One-to-one<br>• Data Independence | System Analysis & Database | Theoretical lectures | 1- Conducting theoretical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions |
| 28-30 | 4 | • Logical Data Independence<br>• Physical Data Independence<br>• Normalization<br>• 1. First Normal Form (1NF).<br>• 2. Second Normal Form (2NF).<br>• 3. Third Normal Form (3NF).<br>• Problems without Normalization<br>• Functional dependency<br>• What is Partial Dependency (PD)<br>• Structure Query Language (SQL)<br>• SQL Types:<br>• System Analysis and Design<br>• Computer system:<br>• Systems Development Methods<br>• Systems Analysis and Design | System Analysis & Database | Theoretical lectures | 1- Conducting theoretical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions |

## 11.Course Evaluation

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

## 12.Learning and Teaching Resources

| | |
|---|---|
| Required textbooks (curricular books, if any) | "Database System Concepts" by Abraham Silberschatz, Henry F. Korth, and S. Sudarshan – Fundamentals of Database Systems" by Ramez Elmasri and Shamkant B. Navathe |
| Main references (sources) | "Database Management Systems" by Raghu Ramakrishnan and Johannes Gehrke |
| Recommended books and references (scientific journals, reports...) | • IEEE Transactions on Knowledge and Data Engineering (TKDE) - This journal focuses on research in knowledge and data engineering, including topics such as data |

| | |
|---|---|
| | mining, machine learning, distributed databases, and data warehousing.<br>• Journal of the ACM (JACM) - Publishes high-quality research articles in computer science, including theoretical and practical aspects of database systems, algorithms, and complexity theory. |
| Electronic References, Websites | **Database Journal**: Database Journal offers articles, tutorials, and news on database management topics, including database design, administration, performance tuning, and emerging technologies |

# Course Description Form

| |
|---|
| 1. Course Name: |
| Computation theory |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 60 theoretical hours |
| 7. Course administrator's name (mention all, if more than one name) |
| Responsible for the theoretical :assistant teacher Rasha hani salman<br>Email: rsalman@uowasit.edu.iq |
| 8. Course Objectives |

| | |
|---|---|
| **Course Objectives** | It provides the theoretical foundations on which computer science is based, and it also gives the student the ability to think logically in building algorithms because they require mental thinking abilities and deduction and deduction, that is, it requires a creative mind. |
| 9. Teaching and Learning Strategies | |
| **Strategy** | 1- Participate in lectures, discussions, and practical activities to enhance learning, including problem-solving sessions, group projects, and programming assignments to apply theoretical concepts in practice.<br>2- Use self-learning resources such as textbooks, online courses, and tutorials to explore computational theory concepts at your own pace, complementing classroom learning for deeper understanding.<br>3- Regularly practice solving arithmetic problems and exercises to enhance problem-solving skills and reinforce theoretical concepts, while working on solving various problems to develop diversity in applying different concepts.<br>4- Utilize visualization tools, software simulations, and interactive platforms to visually explore abstract concepts such as machines, rules, and algorithms, which helps in understanding complex theoretical ideas. |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
| 1-8 | 4 | Introduction, some application of computation theory basic operation on set ,plandrome ,kleene clouser ,regular expression , (definition, examples) regular | Computation theory | Blended learning, theoretical lectures,and problem-solving techniques in groups | 1. Holding daily and quarterly tests, including theoretical and practical<br>2. Seminars, in which students are assigned topics<br>3. Finishing small jobs by working in groups<br>4-Daily queries and conversations |
| 9-16 | 4 | Language grammer ,grammars Contect free grammer Derivatuion tree Leftmost derivation Right most derivation Ambiguity in grammer | Computation theory | Blended learning, theoretical lectures,and problem-solving techniquesin groups | 1. Holding daily and quarterly tests, including theoretical and practical<br>2. Seminars, in which students are assigned topics<br>3. Finishing small jobs by working in groups<br>4-Daily queries and conversations |

| | | | | | |
|---|---|---|---|---|---|
| 17-22 | 4 | -Finite automata (FA)<br>-Deterministic Finite Automata (DFA)<br>-Nondeterministic Finite Automaton<br>-Proprieties of NFA<br>-Convert Nondeterministic finite automation<br>-Finite State Machine with Output (Moore and Mealy Machine ) | Computation theory | Blended learning, theoretical lectures, and problem-solving techniques in groups | 1. Holding daily and quarterly tests, including theoretical and practical<br>2. Seminars, in which students are assigned topics<br>3. Finishing small jobs by working in groups<br>4-Daily queries and conversations |
| 23-27 | 4 | -Chomsky Norm Form (CNF)<br>-Conver CFG to CNF)<br>-Chomsky Hierarc | Computation theory | Blended learning, theoretical lectures, and problem-solving techniques in groups | 1. Holding daily and quarterly tests, including theoretical and practical<br>2. Seminars, in which students are assigned topics<br>3. Finishing small jobs by working in groups<br>4-Daily queries and conversations |

| | | | | | |
|---|---|---|---|---|---|
| 28-30 | 4 | - PushDown Automata (PDA<br>- Top – Down/ Bottom – Up Pars<br>-Turning machin | Computation theory | Blended learning, theoretical lectures, and problem-solving techniques in groups | 1. Holding daily and quarterly tests, including theoretical and practical<br>2. Seminars, in which students are assigned topics<br>3. Finishing small jobs by working in groups<br>4-Daily queries and conversations |

| 11.Course Evaluation | |
|---|---|
| - The 40th annual session is divided into 35 grades for the practical subject and 5 grades for student participation in class and solving homework assignments..<br>- Final out of 60 | |
| **12.Learning and Teaching Resources** | |
| Required textbooks (curricular books, if any) | Introductiont to Computation Theory |
| Main references (sources) | Theory and Practice of Computation |
| Recommended books and references (scientific journals, reports...) | Introduction to Theory of Computation |
| Electronic References, Websites | |

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| Microprocessor | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Actual mandatory attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 60 theoretical hours and 60 practical hours | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Name: Lecturer Hussein Najim Abdul Ali<br>Email: hnajim@uowasit.edu.iq | |
| 8. Course Objectives | |
| **Course Objectives** | **1- Introducing the student to the basics of 8086 microprocessors, their internal structure, registers and the transportation system.**<br>**2- The basic operations carried out by microprocessors: reading and writing.**<br>**3- Methods of dividing memory, addressing patterns, and encoding instructions.**<br>**4- Practical application of programming microprocessors in assembly language** |
| 9. Teaching and Learning Strategies | |
| **Strategy** | 1- Using practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Use interactive resources and software applications<br>5- Enhancing cooperation and teamwork<br>6- Providing theoretical lessons paralleled by practical applications |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
| 1-8 | 4 | Fundamentals of Computer: Introduction, Definitions & Characteristics of computer components (Memory, CPU, I/O devices), computer types, CPU architecture, three –bus system architecture, Bus cycle timing, fetch and execute. | Microprocessor | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Daily questions and discussions |
| 9-16 | 4 | Memory: Memory location & addresses, Segmented memory, Real memory, Physical address, Effective address, segmentation advantages. | Microprocessor | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Daily questions and discussions |
| 17-22 | 4 | Addressing: addressing modes, Instruction sets, (form), data transfer instruction, Arithmetic instruction, logic instruction, string instruction. | Microprocessor | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Daily questions and discussions |

| | | | | | |
|---|---|---|---|---|---|
| 23-27 | 4 | Coding: Transfer of control, instruction, Brief introduction to machine code, coding the instruction, machine to instruction. | Microprocessor | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Daily questions and discussions |
| 28-30 | 4 | Structured Assembly Language: programming using procedure, Interrupts and interrupts service, routines, Stack (concepts and applications), i/0 Port_ i/o instruction | Microprocessor | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Daily questions and discussions |

## 11.Course Evaluation

Grades are allocated based on student tasks, including daily preparation, quizzes, oral exams, monthly exams, written exams, reports, and other activities.

## 12.Learning and Teaching Resources

| | |
|---|---|
| Required textbooks (curricular books, if any) | Barry B. Brey, "The Intel Microprocessors 8086/8088, 80186/80188, 80286, 80386, 80486, Pentium, and Pentium Pro processor Architecture, Programming, and Interfacing", 6th Edition, Prentic-Hall Inc., 2003. |
| Main references (sources) | Walter A. Triebe, "The 8086 Microprocessor: Architecture, Software, and Interfacing Techniques", Prentic-Hall Inc., 1998. |
| Supporting Books and References | "Microprocessors" – Mahmoud Zaki Abdullah, Mustafa Sabah Mustafa, Sameer Majid Manati, Suad Hameed Ali |
| Electronic References | Geeks for Geeks – Architecture of 8086 |

# Course Description Form

| |
|---|
| 1. Course Name: |
| Developmental psychology |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2025-2024 |
| 4. Description Preparation Date: |
| 29/1/2025 |
| 5. Available Attendance Forms: |
| **Daily Attendance** |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 2hour |
| 7. Course administrator's name (mention all, if more than one name) |
| Name: Lecturer Alaa Sabah Mohammed<br>Email: alaa.mohmmed@uowasit.edu.iq |
| 8. Course Objectives |

| | |
|---|---|
| **Objectives of the course:** | 1- Understanding each stage a person goes through.<br>2- Explaining the importance of studying developmental psychology.<br>3- Educational and psychological applications and their positive and negative impact on behavior.<br>4- Studying the stages of development from the embryonic stage to old age and how to benefit from them. |
| 9. Teaching and Learning Strategies | |
| **Strategy** | **Lecture and Discussion**<br>**Dialogue and Inquiry** |

## 10.Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
|---|---|---|---|---|---|
| 1-2 | 2 | Knowledge | Introduction to Developmental Psychology, Growth and Maturity, Growth and Development, Principles of Growth and its General Foundations | Lecture Discussion | Daily Exam, Oral and Written Exam |
| 3-4 | 2 | Knowledge | Topics in Developmental Psychology, Life Stages and Growth Demands | Lecture Discussion | Daily Exam, Oral and Written Exam |
| 5-6 | 2 | Knowledge | Importance of Developmental Psychology, Research Methods in Developmental Psychology: Observation, Case Study, Experiment | Lecture Discussion | Daily Exam, Oral and Written Exam |
| 7-8 | 2 | Knowledge | Introduction to Theories in Developmental Psychology: Psychoanalytic Theory, Maturation Theory, Behavioral Theory | Lecture Discussion | Daily Exam, Oral and Written Exam |
| 9-10 | 2 | Knowledge | Factors Affecting Growth: Heredity, Environment, Maturation and Learning, Deprivation | Lecture Discussion | Daily Exam, Oral and Written Exam |
| 11-12 | 2 | Knowledge | Stages and Aspects of Growth: Childhood Stage, Language Growth, Educational Applications, Factors Affecting | Lecture Discussion | Daily Exam, Oral and Written Exam |

| | | | | | |
|---|---|---|---|---|---|
| | | | Growth, Intellectual Growth, Motor Growth, Emotional Growth | | |
| 13-14 | 2 | Knowledge | Child-Rearing Attitudes, Socialization, Socialization Methods, Role of the Family in Socialization | Lecture Discussion | Daily Exam, Oral and Written Exam |
| 15 | 2 | Exam | First Semester Exam | - | Exam |
| 16-17 | 2 | Knowledge | Developmental Psychology of Childhood and Adolescence, Adolescence Meaning, Nature of Adolescence, Stages of Adolescence | Lecture Discussion | Daily Exam, Oral and Written Exam |
| 18-19 | 2 | Knowledge | Physical Growth, Physical Changes in Adolescents, Emotional Growth, Emotional Growth Characteristics | Lecture Discussion | Daily Exam, Oral and Written Exam |
| 20-21 | 2 | Knowledge | Moral Development in Adolescence, Social Development in Adolescence, Intellectual Development | Lecture Discussion | Daily Exam, Oral and Written Exam |
| 22-23 | 2 | Knowledge | Mental Processes: Thinking, Memory, Imagination, Perception | Lecture Discussion | Daily Exam, Oral and Written Exam |
| 24-25 | 2 | Knowledge | Adolescents and Family: Types of Families and their Influence on Adolescent Personality, Democratic Family, Authoritarian Family | Lecture Discussion | Daily Exam, Oral and Written Exam |

| | | | | | |
|---|---|---|---|---|---|
| 26-27 | 2 | Knowledge | Adolescents, School, and Peers: Adolescents and School, Adolescent Attitudes Toward Secondary School, Teacher's Influence on Adolescent Behavior | Lecture Discussion | Daily Exam, Oral and Written Exam |
| 28-29 | 2 | Knowledge | Adolescents and Media, Adolescents and Profession: Importance of Work in Adolescent Life, Factors Affecting Career Choice | Lecture Discussion | Daily Exam, Oral and Written Exam |
| 30 | 2 | Exam | Final Exam | - | 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) | **Developmental Psychology** |
| Main references (sources) | • **Childhood and Adolescence Psychology**: Omayma Ali Khan<br>• **Developmental Psychology**: Hamid Ab Salam Zahran |
| Recommended books and references (scientific journals, reports...) | |
| Electronic References, Websites | |

# Course Description Form

| |
|---|
| 1. Course Name: |
| English language |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 30 theoretical hours, 2 Units |
| 7. Course administrator's name (mention all, if more than one name) |
| Name: Assistant Lecturer Nagham Fadhil Hussein<br>Email: nahussain@uowasit.edu.iq |

| 8. Course Objectives | |
|---|---|
| Course Objectives | - To enrich the students' knowledge about English language<br>- Improve students' ability in listening, speaking, reading and writing<br>- Make the students feel with the English language in their study |

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

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
| 1-8 | 8 | Tenses, Questions, using bilingual dictionary, part of speech, words with more one meaning Present simple, present continuous, using have got &has got describing countries Past simple, past continuous, irregular verb, making connections, suffixes to make different words& negatives<br><br>Review | Unit 1: Getting to know<br><br>Unit 2: The way we live<br><br>Unit3: It all went wrong<br><br>Exercises and solutions | Theoretical lectures , | Examinations and daily activity |
| 9-16 | 8 | Quantity (much, many), some and any (someone, anyone, somewhere, anywhere…), learning buying things<br><br>Review Verb patterns1, future intentions, hot verbs (have, go and come) | Unit4: Lets go shopping<br><br>Exercises and solutions<br>Unit 5: What do you want to do<br><br>Unit 6: Tell me | Theoretical lectures | Examinations and daily activity |

| | | | | | |
|---|---|---|---|---|---|
| | | What's like, comparative & superlative adjectives, talking about cities, synonyms and antonyms<br><br>Present perfect and past simple ,for and since tense revision, past participle, adverbs and words pairs. | what's like<br><br>Exercises and solutions<br>Unit 7: Fame | | |
| 17-22 | 6 | Review<br><br>Obligation (have(got), should& must) jobs, words that go together and compound nouns<br><br>Time and conditional clauses, hot verbs (take, get, do and make)<br><br>Verb patterns2 infinitive purpose , describing feelings and situations | Exercises and solutions<br><br>Unit 8: Do's and don't<br><br>Unit 9: Going places<br><br>Unit 10: Scared to death | Theoretical lectures | Examinations and daily activity |
| 23-27<br><br>28-30 | 5<br><br>3 | Review Passive, verbs and participles, verbs and nouns go together<br><br>second conditional, might, | Exercises and solutions<br>Unit 11: Thing that changed the world<br><br>Unit:12 | Theoretical lecture | Examinations and daily activity |

| | | | | | |
|---|---|---|---|---|---|
| | | phrasal verbs<br><br>present perfect and present perfect continuous, word formation and adverbs<br><br>past perfect, reported statement, hot verbs (bring, take, go and come) | Dreams and reality<br><br>Unit13: Earning a living<br><br>Unit 14: Family ties | Theoretical lecture | Examinations and daily activity |

## 11.Course Evaluation

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

## 12.Learning and Teaching Resources

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

# Course Description Form

| |
|---|
| 1. Course Name: |
| Baath crimes |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 30 theoretical hours |
| 7. Course administrator's name (mention all, if more than one name) |
| Responsible for the theoretical and practical course Name :M.M. Alaa Abdel Amir Ahmed<br>Email: alaamohammed@uowasit.edu.iq |
| 8. Course Objectives |

| | |
|---|---|
| **Course Objectives** | **This course aims to introduce students and inform them of the heinous crimes committed by the Baath regime in Iraq<br>Track it, document it.<br>Analysis and study of the truth about what happened in our country of tragedies, woes and calamities carried out by the unjust Baath regime.<br>Which included all aspects of social life.** |

| |
|---|
| 9. Teaching and Learning Strategies |

| | |
|---|---|
| **Strategy** | 1- Theoretical lectures<br>2- Scientific discussions are analytical<br>3-Continuous assessment: Evaluate students' learning on an ongoing basis to determir their strengths and weaknesses. |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |

| | | | | | |
|---|---|---|---|---|---|
| 1-8 | 1 | | Introduction to the academic subject<br>- The Iraqi Supreme Criminal Court Law of 2005 against the Baath regime.<br>- The concept of Baath crimes and their types.<br>- Definition of crime.<br>- Crime departments.<br>- International crimes.<br>- Decisions issued by the Supreme Criminal Court.<br>- The Baath regime's psychological crimes and their effects<br>- Mechanisms of psychological crimes<br>Psychological effects of crimes. | theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical | Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis |
| 9-16 | 1 | | The Baath regime's social crimes and their effects on society.<br>- The Baath regime's economic crimes and their effects.<br>- The international crimes of the Baath regime and their effects.<br>- The most prominent violations of the Baath regime in Iraq.<br>- The Baath regime's position on religion.<br>- Violations of Iraqi laws.<br>- First semester exam | theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical | Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis |
| 17-22 | 1 | | -Human rights violations.<br>- Political violations of the Baath regime.<br>- Military violations of the Baath regime.<br>- The most prominent torture prisons of the Baath regime.<br>- Environmental crimes in Iraq.<br>- Military and radioactive pollution | theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical | Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis |

| | | | | | |
|---|---|---|---|---|---|
| 23-27 | 1 | | - Mine explosions.<br>- Destruction of cities and villages by the Baath regime.<br>- Drying the Iraqi marshes.<br>Draining the Iraqi marshes. | Discussion sessions (seminar)<br>Discussion theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical<br>theoretical | One minute paper test<br>Short reports<br>Questions and discussions<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis |
| 28-30 | 1 | | - Mass grave crimes.<br>- Chronological classification of mass graves 1963-2003.<br>- Creating cemeteries for the genocide committed by the Baath regime.<br>- Pictures of power crimes.<br>- Second semester exam | theoretical<br>theoretical<br>theoretical<br>theoretical | Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis<br>Discussion and analysis |

## 11.Course Evaluation

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

## 12.Learning and Teaching Resources

| | |
|---|---|
| Required textbooks (curricular books, if any) | The crimes of the Baath regime in Iraq |
| Main references (sources) | 1- The Iraqi Center for Documentation of Baath Crimes, reports condemning the Baath regime (human rights violations)<br>2- Abdul Razzaq Al-Saadi, A Bitter Legacy (Lessons from the De-Baathification Process in Iraq) |
| Recommended books and references (scientific journals, reports...) | The Poisoned Chalice (United Nations reports on the decis of the Iraqi Supreme Court in the Dujail case. |

| | |
|---|---|
| Electronic References, Websites | |

# Course Description Form

| |
|---|
| 1. Course Name: |
| Arabic language |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 2024-11-10 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 30 hours |
| 7. Course administrator's name (mention all, if more than one name) |
| Name: Kawthar Qasim Sahn<br>Email: kqasim@uowasit.edu.iq |

| 8. Course Objectives | |
|---|---|
| **Course Objectives** | It aims to contribute to the formation of teachers who have competence, ability, good linguistic and scientific performance, and active scientific practice. |

| 9. Teaching and Learning Strategies | |
|---|---|
| **Strategy** | - Introducing the student to the correct Arabic language words, their correct structures and methods in an interesting and attractive way.<br>- Enabling the student to read correctly, and to acquire the ability to use the language correctly in communicating with |

| | |
|---|---|
| | others, such as speed, quality of delivery, and good expression. |

10. Course Structure

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

| | | | | | |
|---|---|---|---|---|---|
| 30 -28 | 1 | The student senses the beauty of the words in these texts and their meanings | Poetic texts<br>For the jeweler | Explanation and discussion | Exams and daily discussi on |

## 11- Course Evaluation

- **Daily Discussions** to assess students' understanding.
- **Daily Quizzes** with various short scientific questions to evaluate their comprehension of the material and provide an assessment of daily participation.
- **Instant Participation Requests** from students.
- **Daily and Monthly Exams** for the course material, along with a final exam.

## 12- Learning and Teaching Resources

| | |
|---|---|
| Required textbooks (curricular books any) | **General Arabic for Non-Specialists** by Dr. Kazem Hamad Muhrath |
| Main references (sources) | **The Arabic Language, Learning Grammar Rules, and Literature** by Sadeq Ismail Hafiz |
| Recommended books and references (scientific journals, reports...) | |
| Electronic References, Websites | |

# Course Description Form

| |
|---|
| 1. Course Name: |
| Curriculum and Textbook |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 2024-11-10 |
| 5. Available Attendance Forms: |
| In-person |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 60 hours / 2 units |
| 7. Course administrator's name (mention all, if more than one name) |
| Name: Amer Karim Hadhil<br>Email: ahadhal@uowasit.edu.iq |
| 8. Course Objectives |

| | |
|---|---|
| **Course Objectives** | Facts, concepts, generalizations, laws, theories, goals of science, characteristics of science, assumptions of science, researcher's assumptions, and goals of scientific research. |
| 9. Teaching and Learning Strategies | |
| **Strategy** | Using educational discussion (educational dialogue) based on exchanging ideas to reach facts.<br>Using modern technologies (computer). |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **method** |
| 1-8 | 2 | Introduction to scientific research methods | First Semester | In-person | Daily assignments and attendance checking |
| 9-16 | 2 | Research sources, characteristics of scientific research, elements of a research plan | Second Semester | In-person | Daily assignments and attendance checking |
| 17-22 | 2 | Historical research, descriptive research and its stages | Third Semester | In-person | Daily assignments and attendance checking |
| 23-27 | 2 | Experimental research, variables and their types | Fourth Semester | In-person | Daily assignments and attendance checking |
| 28-30 | 2 | Tools of scientific research: samples, questionnaires, interviews, observations, tests | Fifth Semester | In-person | Daily assignments and attendance checking |

## 11- Course Evaluation

- Distribution of grades out of 100 based on student tasks such as daily preparation, daily, oral, monthly, and written exams, reports, etc.
- 30 marks for exams (two exams).
- 5 marks for daily attendance.
- 5 marks for daily participation.

## 12- Learning and Teaching Resources

| | |
|---|---|
| Required textbooks (curricular books any) | |
| Main references (sources) | |
| Recommended books and references (scientific journals, reports...) | |
| Electronic References, Websites | |

# Description of the Third stage course

# Course Description Form

| 1. Course Name: | |
|---|---|
| Compilers | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Actual mandatory attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 60 hours theoretical, 60 hours practical | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Practical Course Instructor: Abdul Hadi Nazim Mohsen<br>Email: abd_mohsen@uowasit.edu.iq | |
| 8. Course Objectives | |
| **Course Objectives** | • **Developing Compilers:** This specialization aims to understand how compilers work, which are programs that convert source code from a programming language to machine code executable on a computer.<br>• **Improving Program Performance:** The study of compilers contributes to improving program performance through the optimization of the translation process and source code.<br>• **Analysis of Programming Languages:** This course covers the study and analysis of programming languages, including language structure and syntax.<br>• **Designing New Programming Languages:** Specialists in this field can contribute to designing new programming languages or improving existing ones.<br>• **Improving Developer Experience:** This specialization aims to enhance developers' experience through the development of source code analysis tools and performance improvements. |

| 9. Teaching and Learning Strategies | |
|---|---|
| **Strategy** | • Employing practical examples.<br>• Project-based learning.<br>• Discussions and active exchange of ideas.<br>• Using interactive resources and software applications.<br>• Promoting collaboration and teamwork.<br>• Delivering parallel theoretical lessons with practical applications.<br>• Encouraging self-exploration and continuous learning. |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
| 1-8 | 4 | Definitions of compiler, assembler, linker, compiler phases, error handler, symbol table manager, grammar descriptions, finite state automata (FSA), ε-closure function, lexical analysis sub-phase | Compilers | Theoretical and practical lectures and lab work | Daily quizzes, monthly exams, seminars, daily discussions |
| 9-16 | 4 | Algorithm for converting transition diagrams to NDFSA, converting NDFSA to DFSA, minimizing FSA, AHO algorithm for token recognition, syntax analysis architecture, grammar derivation | Compilers | Theoretical and practical lectures and lab work | Daily quizzes, monthly exams, seminars, daily discussions |
| 17-22 | 4 | Recursion types, elimination of left recursion, first and follow algorithm, top-down and bottom-up parsers, operator precedence parser, LR, SLR, LALR parsers, syntax-directed translation, semantic analyzer | Compilers | Theoretical and practical lectures and lab work | Daily quizzes, monthly exams, seminars, daily discussions |
| 23-27 | 4 | Code optimization: peephole optimization, optimization of blo loops in flow graphs, global data f analysis | Compilers | Theoretical and practical lectures and lab work | Daily quizzes, monthly exams, seminars, daily discussions |
| 28-30 | 4 | Target machine runtime storage management, code generation, ba blocks, and flow graph, simple co generator, register allocation | Compilers | Theoretical and practical lectures and lab work | Daily quizzes, monthly exams, seminars, daily discussions |

| 11.Course Evaluation | |
|---|---|
| • The annual grade out of 40 is distributed as follows: 15 points for the practical part and 25 points for the theoretical part, including 10 points for project groups and daily work.<br>• The final exam is out of 60. | |
| **12.Learning and Teaching Resources** | |
| Required textbooks (curricular books, if any) | • Aho, Alfred & Sethi, Ravi & Ullman, Jeffrey. *Compilers: Principles, Techniques, and Tools* ISBN 0201100886 The Classic Dragon book<br>• Appel, Andrew *Modern Compiler Implementation C/Java/ML* (respectively ISBN 0-521-58390-X,ISB 0-521-58388-8, ISBN 0-521-58274-1 is a set of cleanly written texts on compiler design, studied fr various different methodological perspectives.<br>• Brown, P.J. *Writing Interactive Compilers and Interpreters* ISBN 047127609X Useful practical advice, not much theory. |
| Main references (sources) | |
| Recommended books and references (scientific journals, reports...) | |
| Electronic References, Websites | |

# Course Description Form

| |
|---|
| 1. Course Name: |
| Artificial Intelligence |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 60 theoretical hours and 60 practical hours |
| 7. Course administrator's name (mention all, if more than one name) |
| Responsible for the theoretical and practical course Name: Assist. porf. Dr Rawaa Ismael Farhan<br>Email: ralrikabi@uowasit.edu.iq |
| 8. Course Objectives |

| | |
|---|---|
| **Course Objectives** | **1- Introducing the student to the basic concepts and applications of artificial intelligence.**<br>**2- Using artificial intelligence algorithms in the research process.**<br>**3- Drawing planning strategies to solve various problems.**<br>**4- Using artificial intelligence in natural language processing.** |
| 9. Teaching and Learning Strategies | |
| **Strategy** | • Project-based learning<br>• Problem-based learning<br>• Blended learning and collaborative learning |

| |
|---|
| 10. Course Structure |

| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation Methods: |
|---|---|---|---|---|---|
| 1-8 | 4 | Fundamentals of Artificial Intelligence (AI): General introduction to artificial intelligence, foundation and history of artificial intelligence, applications of artificial intelligence, architecture of a artificial intelligence, language and environment of A.I. and artificial intelligence branches. | Artificial Intelligence | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | • Conducting theoretical and practical exams (daily and semester exams)<br>• Seminars (assigning topics to students)<br>• Daily questions and discussions |
| 9-16 | 4 | state space: define the problem as a state space , production system(add new example) ,problem characteristics , some example of A.I problem (8-puzzle , monkey and banana,….)(add new example), search technique (blind search) DFS and BFS(add new example), intelligent search technique (hill climbing, generate and test ), best first search(add new example), A-algorithms(add new example) , A*-algorithms(add new example),min – max and alpha-beta algorithms(add new example) | Artificial Intelligence | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | • Conducting theoretical and practical exams (daily and semester exams)<br>• Seminars (assigning topics to students)<br>• Daily questions and discussions |
| 17-22 | 4 | Problems: problem reduction and (and/ or) graph(add new example), forward and backward chaining(add new example), black board approach(add new example). | Artificial Intelligence | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | • Conducting theoretical and practical exams (daily and semester exams)<br>• Seminars (assigning topics to students)<br>• Daily questions and discussions |

| | | | | | | |
|---|---|---|---|---|---|---|
| 23-27<br><br>28-30 | 4 | knowledge representation: (propositional logic & predicate logic) (add new example), logical representation, (procedural & network & structured) representations, clause form algorithm, resolution in prepositional logic algorithm; prepositional resolution (add new example), the unification algorithm, resolution in predicate logic algorithm; resolution (add new example), (continue to) resolution in predicate logic algorithm; resolution (add new example | Artificial Intelligence<br><br>Artificial Intelligence | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions | • Conducting theoretical and practical exams (daily and semester exams)<br>• Seminars (assigning topics to students)<br>• Daily questions and discussions |
| | | Expert System: expert system (introduction, architecture, characteristic), rule-based application of expert system, example on expert system, introduction to neural network, (continue to) introduction to neural network, introduction to genetic algorithm. | | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions | • Conducting theoretical and practical exams (daily and semester exams)<br>• Seminars (assigning topics to students)<br>• Daily questions and discussions |

## 11.Course Evaluation

**Grade Distribution (out of 100) based on student tasks such as daily preparation, daily written and oral exams, monthly exams, written assignments, reports, etc.:**

## 12.Learning and Teaching Resources

| | |
|---|---|
| Required Textbooks (Curriculum, if available) | Luger, George F. (2009) Artificial Intelligence: Structures and Strategies for Complex Problem Solving, 6th edition. Boston: Addison-Wesley Pearson Education (Book) |
| Main References (Sources) | Boston: Addison-Wesley Pearson Education (Book) |
| Recommended Supplementary Books and References (Scientific Journals, Reports, etc.) | N/A |
| Electronic References, Websites | www.geeksforgeeks.org/ |

# Course Description Form

| |
|---|
| 1. Course Name: |
| Computer graphics |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 60 theoretical hours and 60 practical hours |
| 7. Course administrator's name (mention all, if more than one name) |
| Assistant Professor Dr. Israa Saleh Hasson<br>**Email:** ealomari@uowasit.edu.iq<br><br>**Practical Course Instructor:** Nooralhuda Lateef<br>**Email:** nooralhudalateef@gmail.com |

| 8. Course Objectives | |
|---|---|
| **Course Objectives** | - Understand the basics of computer graphics.<br>- Explore the concept of computer graphics and its digital representation.<br>- Comprehend computer drawing strategies and how to display them on electronic screens.<br>- Understand computer graphics algorithms.<br>- Grasp static and animated engineering graphics in various dimensions and their direct relevance to all electronic applications, especially smart applications. |

| 9. Teaching and Learning Strategies | |
|---|---|
| **Strategy** | 1- Using practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Use interactive resources and software applications<br>5- Enhancing cooperation and teamwork |

| | |
|---|---|
| | 6- Providing theoretical lessons paralleled by practical applications<br>7- Encouraging self-exploration and continuous learning |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
| 1-8 | 4 | What are computer graphics? Overview. Computer graphics applications. Display hardware. | Computer graphics | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 9-16 | 4 | Graphics elements:<br>-Mode (text mode, graphic mode)<br>Picture elements.<br>Raster scan display<br>Draw the point algorithm. | Computer graphics | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 17-22 | 4 | Colors and intensities.<br>Raster and vector.<br>Raster types.<br>Draw horizontal line algorithm.<br>Draw vertical line algorithm. | Computer graphics | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 23-27 | 4 | Cathode ray tube.<br>Raster scan.<br>Random scan or vector scan.<br>Introduction of frame buffer.<br>Draw the slop li algorithm.<br>DDA algorithn | Computer graphics | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

| | | | | | |
|---|---|---|---|---|---|
| 28-30 | 4 | Frame buffer: Normal frame buffer. RGB frame buffer. Bresenham's line algorithm. Midpoint algorit Bresenham's circ algorithm | Computer graphics | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning. | 1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions |

## 11. Course Evaluation

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

## 12. Learning and Teaching Resources

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

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| visual basic | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Actual mandatory attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 60 theoretical hours and 60 practical hours | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Responsible for the theoretical and practical course Name **Assistant Lecturer Baraa Mohammed Hassn**<br>Email: bhassan@uowasit.edu.iq | |
| 8. Course Objectives | |
| **Course Objectives** | **- The course aims to provide students with the basic concepts and tools for configuring an environment (.NET FRAMEWORK) to give them the ability to design and develop applications on the (WINDOWS) environment using the programming language (VISUAL BASIC.NET) and the database (SQL SERVER).** |
| 9. Teaching and Learning Strategies | |
| **Strategy** | 1- Using practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Use interactive resources and software applications<br>5- Enhancing cooperation and teamwork<br>6- Providing theoretical lessons paralleled by practical applications<br>7- Encouraging self-exploration and continuous learning |

## 10. Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
|---|---|---|---|---|---|
| 1-8 | 4 | Basic components of VB windows toolbox variables Library function & string function branching statements | visual basic | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 9-16 | 4 | looping statements control tools option combo box, check box, button frame ,list box directory and files shapes control , box massage | visual basic | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 17-22 | 4 | arrays dimensional tow-array bubble and selection sort sequential and binary search collections control array | visual basic | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 23-27 | 4 | Multi form and menus the menu editor , sub menus) Pop-up menu ( creating and using ) | visual basic | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

| | | | | | |
|---|---|---|---|---|---|
| 28-30 | 4 | the common dialogs control procedures and modules subroutines and functions Mechanisms argument – passing graphics controls | visual basic | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

## 11.Course Evaluation

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

## 12.Learning and Teaching Resources

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

# Course Description Form

| |
|---|
| 1. Course Name: |
| Computer architecture |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 60 theoretical hours |
| 7. Course administrator's name (mention all, if more than one name) |
| Responsible for the theoretical course Name: Lec. zamen abood ramadaan<br>Email: z.ramadaan@uowasit.edu.iq |
| 8. Course Objectives |

| | |
|---|---|
| **Course Objectives** | **1. Introduction the student to the basics of computer architecture.**<br>**2. Components of computer architecture and its basics.**<br>**3. The security challenges and problems it suffers from.** |
| 9. Teaching and Learning Strategies | |
| **Strategy** | 1- Using practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Use interactive resources and software applications<br>5- Enhancing cooperation and teamwork<br>6- Providing theoretical lessons paralleled by practical applications<br>7- Encouraging self-exploration and continuous learning |

| 10.Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
| 1-8 | 2 | .Introduction &.Memory Management & Types of Memory & Memory Hierarchy & | Computer architecture | Theoretical and, the use of the group system to solve problems, and blended learning | 1-Conducting theoretical (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 9-16 | 2 | Cache Memory &Memory Address Mapping & DIRECT MAPPING:& Fully Associative Mapping | Computer architecture | Theoretical and, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 17-22 | 2 | SET ASSOCIATIVE &Replacement Technique & Input/ output ( I/O)&Direct Memory Access(DMA) & Input/ Output (I/O) Concept | Computer architecture | Theoretical and, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

| | | | | | |
|---|---|---|---|---|---|
| 23-27 | 2 | PrInterrupt-Driven I/Oogrammed I/O & Direct Memory Access (DMA) & Single bus, detached DMA- I/O confrguration. &Single bus, Integrated DMA- I/O confrguration. | Computer architecture | Theoretical and, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 28-30 | 2 | Using separate I/O bus & . -I/O Channals And Processors & AssociativeOperation of Associative Memories Memories & Applications &Cache Coherence Basic Concept | Computer architecture | Theoretical and, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

## 11.Course Evaluation

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

## 12.Learning and Teaching Resources

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

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| Software Engineering | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Actual mandatory attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 60 theoretical hours | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Responsible for the theoretical and practical course Name: Dr Ali Fadhil Rashid<br>Email: alirashid@uowasit.edu.iq | |
| 8. Course Objectives | |
| **Course Objectives** | The program will prepare our students to be successful professionals in the field with solid fundamental knowledge of software engineering.<br>to be successful professionals in the field with solid fundamental knowledge of software engineering<br>Utilize and exhibit strong communication and interpersonal skills, as well as professional and ethical principles when functioning as members and leaders of multi-disciplinary teams<br>Apply their foundations in software engineering to adapt to readily changing environments using the appropriate theory, principles and processes<br>• Understand the concept of Software Engineeing<br>• Knowledge of Software Life cycle Steps |
| 9. Teaching and Learning Strategies | |
| **Strategy** | 1- Using practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Use interactive resources and software applications<br>5- Enhancing cooperation and teamwork<br>6- Providing theoretical lessons paralleled by practical applications<br>7- Encouraging self-exploration and continuous learning |

| | |
|---|---|
| 10. Course Structure | |

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

| | | | | | |
|---|---|---|---|---|---|
| 17-22 | 2 | • What is a Requirement?<br>• REQUIREMENTS-GATHERING TECHNIQUES<br>• Interviews<br>• Joint Application Development (JAD)<br>• Questionnaires<br>• Document Analysis<br>• Observation<br>• Selecting the Appropriate Requirements-Gathering Techniques<br>• The Analysis Phase Activity<br>• Models and Modeling<br>• Types of Models | Software Engineering | Theoretical lectures | 1- Conducting theoretical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 23-27 | 2 | • Events Affecting a Charge Account Processing System<br>• Types of Events<br>• Process Modeling Process Data flow diagramming<br>• Data Flow Diagram Symbols<br>• PDFD Example For a Hospital<br>• Student software engineering projects discussion<br>• Evaluating DFD | Software Engineering | Theoretical lectures | 1- Conducting theoretical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

| | | | | | |
|---|---|---|---|---|---|
| 28-30 | 2 | • Quality<br>• Validating the DFD<br>• Consistency Rules<br>• Syntax errors<br>• Typical errors that can occur in a data flow diagram (payroll example)<br>• Logical and Physical Data Flow Diagrams<br>• Moving to The Design<br>• The Design Strategies<br>• Technology and Operation Managements<br>• Case tool (computer Aided S/W Engineeri tool | Software Engineering | Theoretical lectures | 1- Conducting theoretical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

## 11. Course Evaluation

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

## 12. Learning and Teaching Resources

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

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| Data base design | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Actual mandatory attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 60 theoretical hours and 60 practical hours | |
| 7. Course administrator's name (mention all, if more than one name) | |
| **Course Instructor (Theoretical and Practical):** Assistant Professor Eman Kazem Aajlan<br>Email: eajlan@uowasit.edu.iq | |
| 8. Course Objectives | |
| **Course Objectives** | 1- The importance of good database design and how it affects its performance and efficiency through the application of new design concepts in database systems.<br>2- Training students on how to analyze the information provided by the user to build a model.<br>3- The ability to convert R-E models into relational database tables (R-E to relational schema).<br>4- Implementing the necessary steps to convert logical relational tables into SQL statements using DBMS (MySQL Server) with specific conditions for entity relationships.<br>5- Developing students' cognitive skills to benefit from the knowledge they have acquired in understanding user needs and extracting the necessary information to build systems, and applying them effectively in their professional life. |
| 9. Teaching and Learning Strategies | |
| **Strategy** | 1- Using practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Use interactive resources and software applications<br>5- Enhancing cooperation and teamwork |

| | |
|---|---|
| | 6- Providing theoretical lessons paralleled by practical applications<br>7- Encouraging self-exploration and continuous learning |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
| 1-8 | 4 | Introduction to dB concepts, Goals of Effective Database Design, Classification of (DBMS), Database design steps, E-R Model (Constructs), Basic Objects: Entities, Relationships, Basic Objects: Relationships, Total /Partial participation & Alternative Conceptual Data Modeling Notations, | Data base design | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 9-16 | 4 | Logical Database Design: ER to Relational, Entity Sets to Tables Relationship Sets (without Constraints) to Tables, Translating Relationship Sets with Key Constraints, Translating Relationship Sets ER to Relational: Additional Examples, (EER) Superclass / | Data base design | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

| | | | | | |
|---|---|---|---|---|---|
| | | Subclass Generalization/ Specialization Union or category Aggregation, Translating ER Diagrams to relational schema, Transforming the Conceptual Data Model to SQL, Transforming the Conceptual Data Model to SQL | | | |
| 17-22 | 4 | Logical Database Design, Relational algebra, Relational calculus, Advanced SQL: TRIGGERS AND ACTIVE DATABASES, STORED PROCEDURES, view | Data base design | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 23-27 | 4 | Create & Drop view in MySQL, Index Basic Concepts, SQL Joins: Inner join Left join, SQL Joins: Right join Full join Cross join, Accessing SQL from a Programming Language | Data base design | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

| | | | | | |
|---|---|---|---|---|---|
| 28-30 | 4 | New DB Data Model Types, New DB Data Model Types | Data base design | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

## 11. Course Evaluation

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

## 12. Learning and Teaching Resources

| | |
|---|---|
| **Required Textbooks (Curriculum, if available)** | |
| **Main References (Sources)** | 1. *DATABASE SYSTEM CONCEPTS, Sixth edition. 2006*<br>2. *DATABASE MANAGEMENT SYSTEMS, Third edition. 2003*<br>3. *FUNDAMENTALS OF Database Systems, SIXTH EDITION. 2011*<br>4. *Database Modeling & Design, Fourth Edition. 2006*<br>5. *Beginning Database Design Solutions*, Rod Stephens, Wiley Publishing, Inc., 2009<br>6. *Database Solutions Step by Step*, Thomas M. Connolly, Carolyn E. Begg, 2004 |
| Recommended Supplementary Books and References (Scientific Journals, Reports, etc.) | N/A |
| Electronic References, Websites | 1. MySQL Website: https://www.mysql.com/<br>2. SQL Course Website: https://www.sqlcourse.com/<br>3. SQL Bolt Website: https://sqlbolt.com/ |

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| Curricula and Teaching Methods | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Actual mandatory attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 30 theoretical hours and 60 practical hours | |
| 7. Course administrator's name (mention all, if more than one name) | |
| **Instructor: M.M. Abbas Hadi Abdul Sayed**<br>**University Email: ahadi@uowasit.edu.iq** | |
| 8. Course Objectives | |
| **Course Objectives** | • To build a solid background for computer science students regarding teaching methods in general.<br>• To understand how to apply these methods during the application period and prepare teaching plans for the student applying them.<br>• To train students in classroom management, using teaching methods, activities, and educational tools, as well as evaluating students.<br><br>• In addition, the course represents applications of computer teaching methods.. |
| 9. Teaching and Learning Strategies | |
| **Strategy** | • **Active Learning:**<br><br>• **Cooperative learning:** Divide students into small groups to work on projects or group tasks.<br>• **Project-based learning:** Assign students real-world projects that challenge them and require them to apply what they have learned.<br>• **Problem-solving based learning:** Present problems to students that they need to solve using critical thinking and problem-solving skills. |

| | |
|---|---|
| | • **Use of Technology:**<br><br>  • **Integrating technology in the learning process:** Use computers, the internet, and tablets in educational activities.<br>  • **Using e-learning platforms:** Utilize e-learning platforms to deliver course content and facilitate interaction between students and instructors.<br>  • **Connecting theory to practice.**<br><br>• **Continuous Assessment:**<br><br>  • Continuously assess student learning to identify strengths and weaknesses. |

10. Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
|---|---|---|---|---|---|
| 1-8 | 2 | Teaching as an experience, Teaching as a system, Teaching as a communication process, Concept of teaching, Teaching as science and art, Learning and teaching, Education and teaching, Elements of the educational process, Foundations and principles of teaching, Characteristics of a successful teacher, Components of the teaching process, Concept of teaching strategy, Concept of teaching method, | Enabling students to understand the nature of teaching | Discussion sessions (seminar), Collaborative learning, Active learning | One-minute paper test, Short reports, Questions and discussions, Written exam |

| | | | | | |
|---|---|---|---|---|---|
| | | Features of teaching methods, Principles that teaching methods are based on, Difference between learning and education, Types of teaching methods, Difference between strategy, method, and style | | | |
| 9-16 | 2 | Sources of educational objectives, Levels of educational objectives, Meaning of behavioral objectives, Formulation of behavioral objectives, Conditions for behavioral objectives, How to set behavioral objectives, Classification of behavioral objectives, Classification of cognitive domain, Classification of affective domain, Classification of psychomotor domain, Importance of formulating behavioral objectives (teacher, | Educational objectives | Discussion sessions (seminar), Collaborative learning, Active learning | One-minute paper test, Short reports, Questions and discussions, Written exam |

| | | | | | |
|---|---|---|---|---|---|
| | | student, and subject matter) | | | |
| 17-22 | 2 | Lecture method, Discussion method, Inquiry method, Investigation method, Exploration method, Problem-solving method, Computer-assisted learning, Features of programmed learning using computers | Classification of teaching methods | Discussion sessions (seminar), Collaborative learning, Active learning | One-minute paper test, Short reports, Questions and discussions, Written exam |
| 23-27 | 2 | Concept of planning in teaching, Importance of planning for teaching, Foundations of good planning, Characteristics of effective planning, Types of teaching plans, Daily lesson plan, Preparing the daily lesson plan, Importance of preparing the daily lesson plan, Importance of | Concept of planning | Discussion sessions (seminar), Collaborative learning, Active learning, Training students to prepare daily lesson plans | One-minute paper test, Short reports, Questions and discussions, Written exam |

| | | | | | |
|---|---|---|---|---|---|
| | | daily lesson preparation, Functions of daily preparation, Lesson preparation notebook | | | |
| 28-30 | 2 | Functions of assessment, Types of assessment, Assessment tools, Objective tests, Essay tests | Concept of assessment | Discussion sessions (seminar), Collaborative learning, Active learning, Training students to formulate objective and essay questions | One-minute paper test, Short reports, Questions and discussions, Written exam |

## 11. Course Evaluation

The annual grade out of 40 is distributed as follows:

- 30 points for midterm exams (at least two tests each semester)
- 5 points for participation, activities, and reports
- 5 points for daily attendanceئ

## 12. Learning and Teaching Resources

| | |
|---|---|
| **Required Textbooks (Curriculum, if available)** | The book "Curricula and General Teaching Methods" |
| **Main References (Sources)** | |
| Recommended Supplementary Books and References (Scientific Journals, Reports, etc.) | "Learning and Teaching Strategies" |
| Electronic References, Websites | |

# Course Description Form

| 1. Course Name: | |
|---|---|
| **Guidance and Mental Health** | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| **2024/2025** | |
| 4. Description Preparation Date: | |
| **10/11/2024** | |
| 5. Available Attendance Forms: | |
| **In-person attendance in classrooms and practical labs** | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| **60 theoretical hours** | |
| 7. Course administrator's name (mention all, if more than one name) | |
| **Name: Dr. Nada Nidhal Najm**<br>**Email: nnajm@uowasit.edu.iq** | |
| 8. Course Objectives | |
| **Course Objectives** | • Provide students with general knowledge about the purpose of guidance and mental health.<br>• Introduce students to the characteristics of the guidance and mental health process.<br>• Familiarize students with the historical foundations of guidance and mental health.<br>• Introduce students to the social and economic foundations of guidance and mental health.<br>• Explain the scientific foundation of education and teaching in relation to guidance and mental health. |
| 9. Teaching and Learning Strategies | |
| **Strategy** | • Thinking and discussion-based strategies |

## 10. Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
|---|---|---|---|---|---|
| 1 | 2 | Guidance and counseling, origin and concept | Origin of educational guidance and counseling | Data Show | Daily exams |
| 2 | 2 | Relationship between guidance and counseling | Importance of educational guidance | = | Daily exam |
| 3 | 2 | Objectives of educational guidance | Academic, professional, personal, and social development | = | = |
| 4 | 2 | Fundamentals of guidance | Psychological, philosophical, religious, and ethical foundations | = | = |
| 5 | 2 | Exam | | | |
| 6 | 2 | Methods of educational counseling for students | Individual and group counseling | | |
| 7 | 2 | Types of educational counseling and their benefits | Direct and indirect counseling | | |
| 8 | 2 | Counseling and various sciences | Counseling and education, counseling and sociology | | |
| 9 | 2 | Importance of counseling and its media role | Psychological, religious, and professional counseling | | |
| 10 | 2 | Exam | | | |
| 11 | 2 | Major theories of educational counseling | Trait-factor theory and individual differences | | |
| 12 | 2 | The individual's ability to overcome problems | Personality theory and self-theory | | |
| 13 | 2 | Understanding human behavior | Behavioral theory | | |
| 14 | 2 | Holistic approach to counseling | Gestalt theory | | |
| 15 | 2 | Exam | | | |
| 16 | 2 | Role of the educational counselor and professional ethics | Nature of the counseling process | | |
| 17 | 2 | Importance of counselor's beliefs | Characteristics of the counselor | | |

| | | | | | |
|---|---|---|---|---|---|
| 18 | 2 | Adhering to professional ethics and framework | Ethics of the counseling profession | | |
| 19 | 2 | Enhancing university oversight role | Academic counseling committees in universities | | |
| 20 | 2 | Exam | | | |
| 21 | 2 | Educational counseling program services | Counselor’s role in dealing with students with special needs | | |
| 22 | 2 | High-achieving and gifted students | Students with learning difficulties | | |
| 23 | 2 | Understanding students' motivations | Motivation in the counseling process | | |
| 24 | 2 | Providing support and assistance | Counseling at different educational stages | | |
| 25 | 2 | Exam | | | |
| 26 | 2 | Importance of counseling in the Arab world | Student problems and the role of the educational counselor | | |
| 27 | 2 | Finding appropriate solutions to problems | Types of school problems and how to deal with them | | |
| 28 | 2 | Lack of school services and facilities | Major challenges faced by educational institutions | | |
| 29 | 2 | Promoting societal growth and avoiding negative behaviors | Cheating in exams or skipping school | | |
| 30 | 2 | Exam | | | |

| 11.Course Evaluation | |
|---|---|
| Grades are distributed out of 100 based on student assignments, daily, oral, monthly, and written exams, discussion, and research paper evaluations. | |
| 12.Learning and Teaching Resources | |
| Required textbooks (curricular books, if any) | |
| Main references (sources) | |
| Recommended books and references (scientific journals, reports...) | |
| Electronic References, Websites | |

# Description of the Fourth stage course

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| Operating system | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Actual mandatory attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 60 theoretical hours and 60 practical hours | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Responsible for the theoretical and practical course Name: Lec. zamen abood ramadaan<br>Email: z.ramadaan@uowasit.edu.iq | |
| 8. Course Objectives | |
| **Course Objectives** | **1. Introduction the student to the basics of operating systems and approved algorithms in its application**<br>**2. Components of operating system and its basics.**<br>**3. The security challenges and problems it suffers from.**<br>**4. Practical application of implementing algorithms for operating system.** |
| 9. Teaching and Learning Strategies | |
| **Strategy** | 1- Using practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Use interactive resources and software applications<br>5- Enhancing cooperation and teamwork<br>6- Providing theoretical lessons paralleled by practical applications<br>7- Encouraging self-exploration and continuous learning |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
| 1-8 | 4 | Introduction to Operating Systems &Operating System – Overview & Why do we need an operating system?& Operating system goals: & What Operating Systems Do &History of Operating Systems | Operating system | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 9-16 | 4 | The following are some of the important functions of an operating system:& Operating Systems Structure & The Operating Systems Services &The System Calls and System Programs | Operating system | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 17-22 | 4 | Types of Operating Systems &Batch operating system &Time-sharing operating systems & Real Time operating System & Distributed operating SystemParallel systems & Process Management | Operating system | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

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

| 11. Course Evaluation | |
|---|---|
| - The annual course of 40 is divided into 15 marks for the practical subject and 25 marks for the theoretical subject, including 5 marks for the totals of projects and the daily.<br>- Final out of 60 | |
| **12. Learning and Teaching Resources** | |
| Required textbooks (curricular books any) | |
| Main references (sources) | Fundamental of operating system |

| | |
|---|---|
| Recommended books and references (scientific journals, reports...) | |
| Electronic References, Websites | |

# Course Description Form

| |
|---|
| 1. Course Name: |
| Computer Communication and Networks |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 60 theoretical hours and 60 practical hours |
| 7. Course administrator's name (mention all, if more than one name) |
| Responsible for the theoretical and practical course Name: Assoc.prof.Dr Esraa Saleh Alomari<br>Email: ealomari@uowasit.edu.iq |
| 8. Course Objectives |

| | |
|---|---|
| **Course Objectives** | 1- Providing students with the necessary knowledge and skills in the field of information technology and communications.<br>2- Through this course, students can understand how to build and manage computer networks, transfer data, secure communications, and manage network-dependent systems.<br>3- This course helps students develop skills in dealing with advanced computer networking technologies, qualifying them to work in areas such as network design and development, network support, information security, and web applications. |

| 9. Teaching and Learning Strategies | |
|---|---|
| **Strategy** | 1- Utilizing practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Using interactive resources and applications<br>5- Promoting collaboration and teamwork<br>6- Providing parallel theoretical lessons with practical applications<br>7- Encouraging self-exploration and continuous learning |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
| 1-8 | 4 | -Transmission Mode<br>a. Serial And Parallel<br>b. Simplex-half and full duplex<br>Modulation:<br>modem , pm fm am ,Multiplexing ,TDM and FDM. | computer communication and Networks | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 9-16 | 4 | -Living In Network<br>- What Is Network<br>-Network Media<br>-LAN, WAN, MAN and Internet Network<br>-Network Protocol<br>- Component Of The Network<br>-Networks Criteria ,Network Topologies,<br>1-Transmission Media:guided media , Unguided Media,<br>-OSI model ,<br>a. Application , presentation and session<br>b. transport , network data link and physical<br>Different Purposes-<br>Network layer - IPv4 | computer communication and Networks | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 17-22 | 4 | -Network Devices : Hub, Network Interface Card Repeater bridge Switch Router Gateway<br>-broadcast collision domain , Unicast multicast broadcast, Ethernet , -tcp/ip protocols<br>Addressing The Network<br>Delivery and routing of IP packet, Connection oriented | computer communication and Networks | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

| | | | | | |
|---|---|---|---|---|---|
| | | Connection less services<br>Direct and indirect delivery of packets<br>Routing methods<br>Next hop routing,<br>Network specific routing | | and blended learning | |
| 23-27 | 4 | Addressing The Network<br>-IPv4 Address<br>-IPv4 Address For Different Purposes-<br>Network layer - IPv4 ,-<br>Dividing Host Into Groups ,- examples- Special Addresses - Assigning Addresses ,Class full , Supernetting. -tcp/ip protocols<br>IPv4 Address<br>-IPv4 Address For | computer communication and Networks | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 28-30 | 4 | | | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

## 11. Course Evaluation

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

## 12. Learning and Teaching Resources

| | |
|---|---|
| Required textbooks (curricular books, if any | Computer Networking: A top-down approach |
| Main references (sources) | Computer Networks |
| Recommended books and references (scientific journals, reports...) | Network Warrior |
| Electronic References, Websites | https://www.guru99.com/ar/best-computer-networl books.html?gpp&gpp_sid |

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| Web Design | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Actual Mandatory Attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 60 theoretical hours and 60 practical hours | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Responsible for the theoretical and practical course: Assist. Prof. Dr. Haider Nadhim Murad<br>Email: haidern@uowasit.edu.iq | |
| 8. Course Objectives | |
| **Course Objectives** | The objectives of the website design course include several main points:<br>1. Understanding the principles of good design: Students learned how to apply good design principles in creating and developing websites, such as balance, harmony, ease of use, and visual appeal.<br>2. Learn web design techniques: This includes understanding the basics of web design techniques such as HTML, CSS, and JavaScript, in addition to various design tools such as Bootstrap and WordPress.<br>3. Develop programming skills: Learn programming and web development using programming languages such as PHP, Python, or Ruby on Rails to add dynamic functionality to websites.<br>4. Understanding user experience: Studying how to improve user experience on websites by designing user interfaces that are easy to use and attractive.<br>5. Dealing with search engine optimization (SEO) techniques: Understanding how to optimize websites to appear better in search engine results, which increases the site's reach and increases the number of visitors.<br>6. Learn about security requirements: Learn how to protect websites from electronic attacks and ensure the integrity of the data and information used on the site.<br>7. Developing practical projects: Providing students with the opportunity to apply the concepts and skills they have acquired through designing and developing |

| | |
|---|---|
| | practical projects such as personal websites or commercial websites. |

| 9. Teaching and Learning Strategies | |
|---|---|
| **Strategy** | Teaching and learning strategies for web design can be diverse and comprehensive, including:<br>1. Active and interactive learning.<br>2. Cooperative learning and teamwork.<br>3. Project-based learning and practical applications.<br>4. Using technology in learning and teaching.<br>5. Provide comprehensive evaluation and constructive feedback.<br>6. Benefit from real life lessons and stories.<br>**7.** Diversify and modify educational methods according to students' needs and curriculum objectives. |

10. Course Structure

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

| | | | | | |
|---|---|---|---|---|---|
| | | | | problems, and blended learning | to complete mini projects<br>4. Daily questions and discussions |
| 17-22 | 4 | - Web Communication Protocols<br>- What is a TLD?<br>- Publishing Your Web Site (step-by-step)<br>- What is an Application Server?<br>- Web page programming options<br>- Code (HTML+CSS) | Web Design | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1. Conducting theoretical and practical tests (daily and quarterly)<br>2. Seminars (assigning students to topics)<br>3. Using the group system to complete mini projects<br>4. Daily questions and discussions |
| 23-27 | 4 | - Website Prototype: How to Make a Website Prototype?<br>- Website prototype — what is it, and why do you need it?<br>- A prototype looks something like this.<br>- Advantages of website prototyping<br>- What tasks can the development team solve with a website prototype?<br>- How to build a website prototype?<br>- Top 3 popular ways of prototyping: Paper prototyping<br>- Top 3 popular ways of prototyping: Prototyping with professional apps<br>- Top 3 popular ways of prototyping: Prototyping with online tools<br>- Code (JAVA+MY SQL) | Web Design | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1. Conducting theoretical and practical tests (daily and quarterly)<br>2. Seminars (assigning students to topics)<br>3. Using the group system to complete mini projects<br>4. Daily questions and discussions |
| 28-30 | 4 | - What's a website structure?<br>- The 3 most common types of website structures | Web Design | Theoretical and practical lectures, | 1. Conducting theoretical and practical |

| | | | | | |
|---|---|---|---|---|---|
| | | - 5 tips for building a good website structure<br>- Website structure examples to inspire you!?<br>- Code (PHP) | | practical application in the laboratory, the use of the group system to solve problems, and blended learning | tests (daily and quarterly)<br>2. Seminars (assigning students to topics)<br>3. Using the group system to complete mini projects<br>4. Daily questions and discussions |

## 11. Course Evaluation

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

## 12. Learning and Teaching Resources

| | |
|---|---|
| Required textbooks (curricular books, if any) | - "HTML and CSS: Design and Build Websites" by Jon Duckett.<br>- "Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics" by Jennifer Robbins.<br>- "JavaScript and jQuery: Interactive Front-End Web Development" by Jon Duckett.<br>- "Responsive Web Design with HTML5 and CSS3" by Ben Frain.<br>- "Web Design with HTML, CSS, JavaScript and jQuery Set" by Jon Duckett.<br>- "Designing with Web Standards" by Jeffrey Zeldman and Ethan Marcotte. |
| Main references (sources) | - "HTML and CSS: Design and Build Websites" by Jon Duckett - Covers HTML and CSS concepts in a simplified and detailed manner, making it suitable for beginners and advanced users alike.<br>- "JavaScript and jQuery: Interactive Front-End Web Development" by Jon Duckett - presents applications of JavaScript and the jQuery library in |

| | |
|---|---|
| | developing interactive and dynamic user interfaces.<br>- "Responsive Web Design with HTML5 and CSS3" by Ben Frain - focuses on responsive web design techniques using HTML5 and CSS3.<br>- "Designing with Web Standards" by Jeffrey Zeldman and Ethan Marcotte - reviews modern design standards and smart design techniques to improve the user experience on websites.<br>- "Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics" by Jennifer Robbins - Includes HTML, CSS, and JavaScript concepts as well as web graphics. |
| Recommended books and references (scientific journals, reports...) | - "Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability" by Steve Krug - Focuses on user experience and usability in web design.<br>- "Mobile First" by Luke Wroblewski - Focuses on designing websites for mobile devices first.<br>- "The Elements of User Experience: User-Centered Design for the Web" by Jesse James Garrett - Provides a comprehensive approach to user experience in web design.<br>- "Designing Interfaces: Patterns for Effective Interaction Design" by Jenifer Tidwell - presents effective interaction patterns for interface design.<br>- "Web Form Design: Filling in the Blanks" by Luke Wroblewski - Focuses on designing effective website forms and entries.<br>- "Responsive Design Workflow" by Stephen Hay - presents an effective working process for responsive website design.<br>- "The Principles of Beautiful Web Design" by Jason Beaird - focuses on |

| | |
|---|---|
| | the principles of aesthetic website design. |
| Electronic References, Websites | - Official design techniques websites such as MDN Web Docs (https://developer.mozilla.org/) and W3Schools (https://www.w3schools.com/) - Provide resources, tutorials, and demonstrations on web design techniques.<br>- Other reference books related to graphic design, user experience, and front-end development |

# Course Description Form

| | |
|---|---|
| 1. Course Name: | |
| Internet of Thing | |
| 2. Course Code: | |
| - | |
| 3. Semester / Year: | |
| 2024-2025 | |
| 4. Description Preparation Date: | |
| 10/11/2024 | |
| 5. Available Attendance Forms: | |
| Actual mandatory attendance | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 60 theoretical hours and 60 practical hours | |
| 7. Course administrator's name (mention all, if more than one name) | |
| Responsible for the theoretical and practical course Name: Assist.porf.Dr Baraa Ismael Farhan<br>Email: bfarhan@uowasit.edu.iq<br>Responsible for the practical course Name: Lec. Hussein Najm Abd<br>Email: :hnajim@uowasit.edu.iq | |
| 8. Course Objectives | |
| **Course Objectives** | 1- Introducing the student to the basics of the Internet of Things and the approved protocols for its application<br>2- The layers covered by the Internet of Things and the services it provides<br>3- The security challenges and problems it suffers from<br>4- Practical application of connecting sensors, controller parts, and platforms for the Internet of Things |
| 9. Teaching and Learning Strategies | |
| **Strategy** | 1- Using practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Use interactive resources and software applications<br>5- Enhancing cooperation and teamwork<br>6- Providing theoretical lessons paralleled by practical applications |

| | |
|---|---|
| | 7- Encouraging self-exploration and continuous learning |

10. Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
|---|---|---|---|---|---|
| 1-8 | 4 | Fundamentals of IoT: Introduction, Definitions & Characteristics of IoT, IoT Architectures, Physical & Logical Design of IoT, Enabling Technologies in IoT, History of IoT, About Things in IoT, The Identifiers in IoT, About the Internet in IoT, IoT frameworks, IoT and M2M | Internet of Think | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 9-16 | 4 | Sensors Networks : Definition, Types of Sensors, Types of Actuators, Examples and Working, IoT Development Boards: Arduino IDE and Board Types, , RFID Principles and components, Wireless Sensor Networks: History and Context, The node, Connecting nodes, Networking Nodes, WSN and IoT. | Internet of Think | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 17-22 | 4 | Wireless Technologies for IoT: WPAN Technologies for IoT: IEEE 802.15.4, Zigbee, HART, NFC, Z-Wave, BLE, Bacnet, Modbus. IP Based Protocols for IoT IPv6, 6LowPAN, RPL, REST, AMPQ, CoAP, MQTT. Edge connectivity and protocols | Internet of Think | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

| | | | | | |
|---|---|---|---|---|---|
| 23-27 | 4 | Data Handling& Analytics: Introduction, Bigdata, Types of data, Characteristics of Big data, Data handling Technologies, Flow of data, Data acquisition, Data Storage, Introduction to Hadoop. Introduction to data Analytics, Types of Data analytics, Local Analytics, Cloud analytics and applications | Internet of Think | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |
| 28-30 | 4 | | Applications of IoT: Home Automation, Smart Cities, Energy, Retail Management, Logistics, Agriculture, Health and Lifestyle, Industrial IoT, Legal challenges, IoT design Ethics, IoT in Environmental Protection. | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly)<br>2- Seminars (assigning students to topics)<br>3-Using the group system to complete mini projects<br>4-Daily questions and discussions |

## 11.Course Evaluation

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

## 12.Learning and Teaching Resources

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

# Course Description Form

| |
|---|
| 1. Course Name: |
| Data security |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 60 theoretical hours and 60 practical hours |
| 7. Course administrator's name (mention all, if more than one name) |
| Responsible for the theoretical and practical course: Assist. Prof. Dr. Baraa Ismail Farhan Email: bfarhan@uowasit.edu.iq<br><br>Responsible for the practical course: Noor Al-Huda Lateef<br>Email: nooralhudalateef@gmail.com |
| 8. Course Objectives |

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

| 9. Teaching and Learning Strategies | |
|---|---|
| **Strategy** | 1- Using practical examples<br>2- Project-based learning<br>3- Discussions and effective exchange of ideas<br>4- Use interactive resources and software applicatio<br>5- Enhancing cooperation and teamwork<br>6- Providing theoretical lessons paralleled by practi applications<br>7- Encouraging self-exploration and continuc learning |

| 10. Course Structure | | | | | |
|---|---|---|---|---|---|
| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
| 1-8 | 4 | What security is about in general? Information security in past and present, Factor on Computer Crime Information System Security Classification, Classification based on Function. | Data Security | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions |
| 9-16 | 4 | Type of Attacks Information hiding Sitganography Water marking Encryption Decryption Symmetric and Public Key Systems The Future of Security | Data Security | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions |
| 17-22 | 4 | Basic Terminology of Cryptography Principles of virus types Historical secret key cryptography Application in High (Junior) School Caesar's cipher Monoalphabetic ciphers, Playfair cipher Transposition or Permutation Diffusion Confusion | Data Security | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning | 1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions |
| 23-27 | 4 | Data Encryption Standard DES, Taxonomy of network security One-time pad cipher Rotor machines, | Data Security | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve | 1- Conducting theoretical and practical tests (daily and quarterly) |

| | | | | | |
|---|---|---|---|---|---|
| | | Stream Cipher, Block Cipher Public Key Algorithms RSA Ethical Hacking Types of Hacking Purpose of Hacking The Phases of Ethical Hacking | | problems, and blended learning | 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions |
| 28-30 | 4 | Cybersecurity Importance of Cybersecurity Cybersecurity objectives Elements of Cybersecurity The Cybersecurity Trends Cybersecurity Challenges Cybersecurity Awareness Difference between Ethical Hacking and Cyber Security | Data Security | Theoretical and practical lectures, practical application in the laboratory, the use of the group system to solve problems, and blended learning. | 1- Conducting theoretical and practical tests (daily and quarterly) 2- Seminars (assigning students to topics) 3-Using the group system to complete mini projects 4-Daily questions and discussions |

| 11.Course Evaluation | |
|---|---|
| - The annual course of 40 is divided into 15 marks for the practical subject and 25 marks for the theoretical subject, including 10 marks for the totals of projects and the daily.<br>- Final out of 60 | |
| **12.Learning and Teaching Resources** | |
| Required textbooks (curricular books any) | CRYPTOGRAPHY AND NETWORK SECURITY PRINCIPLES AND PRACTICE<br>FIFTH EDITION, William Stallings |
| Main references (sources) | Mark Stamp, Information Security Principles and Practice, John Wiley & Sons, 2006. |
| Recommended books and references (scientific journals, reports...) | Charles P. Pfleeger and Shari Lawrence Pfleeger, Security in Computing, John Wiley & Sons, Inc., 2007. |
| Electronic References, Websites | |

# Course Description Form

| |
|---|
| 1. Course Name: |
| educational measurement and evaluation |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| is mandatory |
| 6. Number of Credit Hours (Total)(60) / Number of Units (Total)(2) |
| 6. Number of Credit Hours (Total)(60) / Number of Units (Total)(2) |
| 7. Course administrator's name (mention all, if more than one name) |
| Responsible for the theoretical and practical course:<br>Assist. Prof. Nisreen Nasser Khalaf<br>Email: nisreenkhalaf@uowasit.edu.iq |
| 8. Course Objectives |

| | |
|---|---|
| **Preparing teachers capable working i** | |

| 9. Teaching and Learning Strategies | |
|---|---|
| **Strategy** | All learning strategies |

10. Course Structure

| **Week** | **Hours** | **Required Learning Outcomes** | **Unit or subject name** | **Learning method** | **Evaluation method** |
|---|---|---|---|---|---|
| | | | | | |

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

| 12. Learning and Teaching Resources | |
|---|---|
| Required textbooks (curricular books, if any) | educational measurement and evaluation |
| Main references (sources) | educational measurement and evaluation dr.abdel salam jawdt |

| | |
|---|---|
| Recommended books and references (scientific journals, reports...) | educational measurement and evaluation |
| Electronic References, Websites | Magazines and newspapers |

# Course Description Form

| |
|---|
| 1. Course Name: |
| Practical education |
| 2. Course Code: |
| - |
| 3. Semester / Year: |
| 2024-2025 |
| 4. Description Preparation Date: |
| 10/11/2024 |
| 5. Available Attendance Forms: |
| Actual mandatory attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total) |
| 20 weeks in college, 10 practical applications in high schools |
| 7. Course administrator's name (mention all, if more than one name) |
| Responsible for the theoretical and practical course Name :Assistant teacher Abbas Hadi Abdel Sayed<br>Email: ahadi@uowasit.edu.iq |
| 8. Course Objectives |

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

| | |
|---|---|
| | personal qualities, training, evaluation, and diversity of activities toward students. |

## 9. Teaching and Learning Strategies

| | |
|---|---|
| **Strategy** | 1.Imitation and emulation<br>2.Discussion and dialogue<br>3.Cooperative learning<br>4. Problem solving<br>5.Brainstorming |

## 10. Course Structure

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

| | | | | | |
|---|---|---|---|---|---|
| | | | | presentation and discussion<br>They participate in presentation and discussion<br>Participation and discussion<br><br>They participate in presentation and discussion | |
| 9-15 | 2 | Providing a mini-lesson by the students<br>Directing students to schools for the purpose of practical application<br>Directing students to schools for the purpose of practical application<br>Directing students to schools for the purpose of practical application<br>Directing students to schools for the purpose of practical application<br>Directing students to schools for the purpose of practical application<br>Identify the most important problems that students face during the application period | | | |

| 11.Course Evaluation | |
|---|---|
| - The 100th annual session is divided into<br>- 40 marks for the practical education subject (evaluated by the subject professor)<br>- 30 marks evaluated by the educational supervisor during the application period in schools<br>- 30 marks are evaluated by the scientific supervisor during the practical application period in schools | |
| **12.Learning and Teaching Resources** | |
| Required textbooks (curricular books, if any) | -The book on practical education (observation and application) by Prof. Dr. Daoud Abdel Salam. Naz Badr Khan Sindhi |
| Main references (sources) | |
| Recommended books and references (scientific journals, reports...) | |
| Electronic References, Websites | Practical education website: How to be a successful implementer |