

**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**

**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.

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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.

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## Academic Program Description Form

University Name: university of wasit

Faculty/Institute: computer science and information technology

Scientific Department: software departement

Academic or Professional Program Name:

Final Certificate Name: Bachelor of Software Sciences

Academic System: course system

Description Preparation Date: 2024/5/22

File Completion Date: 2024/5/29

Signature:

Head of Department Name:

Date:

الدكتور  
احمد رعد عبد الحسين  
رئيس قسم البرمجيات

Signature:

Scientific Associate Name:

Date:

الدكتور  
احمد رعد عبد الحسين  
رئيس قسم البرمجيات

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Signature of Dr. Saif Ali Alsaadi

Approval of the Dean  
Asst. Prof. Dr  
Saif Ali Alsaadi  
Dean college of computer  
science & Information Technology

# Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                       |                                    |       |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------|------------------------------------|-------|-----------------|
| 1 Course Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                       |                                    |       |                 |
| Programming basics2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                       |                                    |       |                 |
| 2. Course Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                       |                                    |       |                 |
| SFTW108                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                       |                                    |       |                 |
| 3. Semester/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                       |                                    |       |                 |
| Bologna /Second Semester 2023-2024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                       |                                    |       |                 |
| 4. The history of preparation of this description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                       |                                    |       |                 |
| 9/2/2024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                       |                                    |       |                 |
| 5. Available attendance forms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                       |                                    |       |                 |
| Classrooms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |                       |                                    |       |                 |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                       |                                    |       |                 |
| The number of hours (60)/ Number of units (4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                       |                                    |       |                 |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                       |                                    |       |                 |
| Thaer Faraj Ali                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                       |                                    |       |                 |
| Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                       |                                    |       |                 |
| <ul style="list-style-type: none"> <li>Increasing the student's mental abilities in the field of logical thinking and analysis</li> <li>Planning to solve complex problems and breaking them down into small problems that are simplified to solve</li> <li>Developing the student's mindset mentally to understand programming object objects</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                       |                                    |       |                 |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                       |                                    |       |                 |
| <ul style="list-style-type: none"> <li>The first strategy is to show how to identify the problem in the outside world and transfer it to digital reality</li> <li>Urging the student to participate daily and develop the self ability to engage in discussions and solutions to daily examinations that address certain points, including knowledge of the level of understanding, linking the elements of the material presented in daily lectures, as well as evaluating listening, follow-up, talking and reading of the approved sources of the material.</li> <li>The adoption of modern methods in the presentation of the material and put forward in a way that makes it easier for the student to refer to the sequential titles in the introduction of the material is one of the most important strategies followed in the delivery of the material.</li> </ul> |                 |                       |                                    |       | OF THE STRATEGY |
| 10. Course Structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                       |                                    |       |                 |
| Valuation Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Learning Method | Unit or Topic Name    | Intended Learning Outcomes         | Hours | Week            |
| Questions!                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Lectures        | Program ming basics 2 | Loop ( while, do-while)            | 4     | 1               |
| questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Lectures        | Program ming basics 2 | Conditional for Break and Continue | 4     | 2               |

|                                                                                                                                                                                                                 |          |                             |                               |   |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------|-------------------------------|---|---------|
| questions                                                                                                                                                                                                       | Lectures | Program<br>ming<br>basics 2 | Data Structures               | 4 | 3       |
| questions                                                                                                                                                                                                       | Lectures | Program<br>ming<br>basics 2 | Array                         | 4 | 4       |
| Exam 1st Month                                                                                                                                                                                                  |          |                             |                               | 4 | WEEK 5  |
| questions                                                                                                                                                                                                       | Lectures | Program<br>ming<br>basics 2 | Structures                    | 4 | 6       |
| questions                                                                                                                                                                                                       | Lectures | Program<br>ming<br>basics 2 | Functions                     | 4 | 7       |
| questions                                                                                                                                                                                                       | Lectures | Program<br>ming<br>basics 2 | Passing values to<br>Function | 4 | 8       |
| questions                                                                                                                                                                                                       | Lectures | Program<br>ming<br>basics 2 | Overloading                   | 4 | 9       |
| Exam Second month                                                                                                                                                                                               |          |                             |                               | 4 | Week 10 |
| questions                                                                                                                                                                                                       | Lectures | Program<br>ming<br>basics 2 | Recursion                     | 4 | 11      |
| questions                                                                                                                                                                                                       | Lectures | Program<br>ming<br>basics 2 | Class                         | 4 | 12      |
| questions                                                                                                                                                                                                       | Lectures | Program<br>ming<br>basics 2 | pointer                       | 4 | 13      |
| questions                                                                                                                                                                                                       | Lectures | Program<br>ming<br>basics 2 | Constructors                  | 4 | 14      |
| questions                                                                                                                                                                                                       | Lectures | Program<br>ming<br>basics 2 | Files, Exceptions             | 4 | 15      |
| Course Evaluation                                                                                                                                                                                               |          |                             |                               |   |         |
| <ul style="list-style-type: none"> <li>Homework and participation in daily preparation.</li> <li>Giving the grade to students for some of the questions asked in the lecture.</li> <li>Monthly exams</li> </ul> |          |                             |                               |   |         |
| 12. Teaching and Learning Resources                                                                                                                                                                             |          |                             |                               |   |         |
| 1. Complete guide to learn C+ + Book<br>2. C+ + Language Tutorial Book                                                                                                                                          |          |                             |                               |   |         |



## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                            |                                                                                                                           |       |                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------|-------|--------------------|
| 1- Course Name                                                                                                                                                                                                                                                                                                                                                                                             |                 |                            |                                                                                                                           |       |                    |
| Statistics and Probability                                                                                                                                                                                                                                                                                                                                                                                 |                 |                            |                                                                                                                           |       |                    |
| 2-CourseCode                                                                                                                                                                                                                                                                                                                                                                                               |                 |                            |                                                                                                                           |       |                    |
| SFTW210                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                            |                                                                                                                           |       |                    |
| 3-semester/ year                                                                                                                                                                                                                                                                                                                                                                                           |                 |                            |                                                                                                                           |       |                    |
| Semester II 2023-2024                                                                                                                                                                                                                                                                                                                                                                                      |                 |                            |                                                                                                                           |       |                    |
| 4-The history of preparation of this description                                                                                                                                                                                                                                                                                                                                                           |                 |                            |                                                                                                                           |       |                    |
| 2024-2-1                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                            |                                                                                                                           |       |                    |
| 5-Available forms of attendance                                                                                                                                                                                                                                                                                                                                                                            |                 |                            |                                                                                                                           |       |                    |
| Classrooms                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                            |                                                                                                                           |       |                    |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                                                                |                 |                            |                                                                                                                           |       |                    |
| The number of hours (42)/ Number of units (4)                                                                                                                                                                                                                                                                                                                                                              |                 |                            |                                                                                                                           |       |                    |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                               |                 |                            |                                                                                                                           |       |                    |
| Eng. Zain Al-Abidin Abbas Nasser                                                                                                                                                                                                                                                                                                                                                                           |                 |                            |                                                                                                                           |       |                    |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                                                                                       |                 |                            |                                                                                                                           |       |                    |
| <p>A- Knowledge of basic concepts in statistics and statistical data.</p> <p>b. How to display and graph statistical data.</p> <p>Central – tendency measures</p> <p>d. Study of scattering, torsion and kurtosis scales.</p> <p>E. THE THEORY OF PROBABILITY</p> <p>F. Knowledge of random variables and probability distributions</p> <p>G. Acquire the skill of regression and correlation analysis</p> |                 |                            |                                                                                                                           |       |                    |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                                                                                                                                                                                           |                 |                            |                                                                                                                           |       |                    |
| <p>✓ <b>Active Learning:</b> Encourage students to actively apply their knowledge through exercises, lab work, and classroom issues. The more they interact with the material, the better they understand it1.</p> <p><b>Collaboration:</b> Consider allowing students to collaborate, but set clear boundaries. Equal collaboration can enhance understanding and encourage peer-to-peer discussion1.</p> |                 |                            |                                                                                                                           |       | OF THE<br>STRATEGY |
| 10. Course Structure                                                                                                                                                                                                                                                                                                                                                                                       |                 |                            |                                                                                                                           |       |                    |
| Valuation Method                                                                                                                                                                                                                                                                                                                                                                                           | Learning Method | Unit or Topic Name         | Intended Learning Outcomes                                                                                                | Hours | Week               |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                   | Lectures        | Statistics and Probability | General guidance, course introduction and teaching plan                                                                   | 3     | First Week         |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                   | Lectures        | Statistics and Probability | Basic concepts in statistics and probability : statistics, society and sample, variables, data, parameter and statistics. | 3     | The second week    |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                            |                                                                                                                                                                      |   |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------|
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                                                               | Lectures | Statistics and Probability | Data organization, presentation and summarization : frequency, relative and percentile table of metadata and quantitative data. the length and center of the period, | 3 | Week 3          |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                                                               | Lectures | Statistics and Probability | Ascending Cumulative Frequency Table                                                                                                                                 | 3 | The fourth week |
| Monthly exam(1)                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                            |                                                                                                                                                                      | 3 | Fifteenth       |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                                                               | Lectures | Statistics and Probability | Graphical display of upward cumulative histograms and histograms.                                                                                                    | 3 | Week 6          |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                                                               | Lectures | Statistics and Probability | Measures of central tendency: arithmetic mean, weighted mean, mode                                                                                                   | 3 | WEEK 8          |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                                                               | Lectures | Statistics and Probability | Al-Waseet, Al-Ruba 'iyyah, Al-Ashirat, and Al-May                                                                                                                    | 3 | Week 9          |
| Monthly exam(2)                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                            |                                                                                                                                                                      | 3 | Week 10         |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                                                               | Lectures | Statistics and Probability | Scatterometers: Range, half of the interquartile range.Variance Standard                                                                                             | 3 | Week 11         |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                                                               | Lectures | Statistics and Probability | Standard deviation, coefficient of variation (variation), theory (inequality)                                                                                        | 3 | Week 12         |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                                                               | Lectures | Statistics and Probability | Correlation                                                                                                                                                          | 3 | Week 3          |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                                                               | Lectures | Statistics and Probability | (Principles of Probability) Randomized Experiment, Sample Space, Incident . Operations on Incidents (Incident Reparation)                                            | 3 | Week 14         |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                                                               | Lectures | Statistics and Probability | Incidents incompatible (discrete)                                                                                                                                    | 3 | Week 15         |
| Course Evaluation                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                            |                                                                                                                                                                      |   |                 |
| <ul style="list-style-type: none"> <li>▪ Homework and participation in daily preparation.</li> <li>▪ Awarding the degree to students for some of the questions that are asked in the lecture and of a cognitive nature.</li> <li>▪ Monthly exams</li> </ul>                                                                                                                                                                                            |          |                            |                                                                                                                                                                      |   |                 |
| 12. Teaching and Learning Resources                                                                                                                                                                                                                                                                                                                                                                                                                    |          |                            |                                                                                                                                                                      |   |                 |
| <ul style="list-style-type: none"> <li>✓ 1-Introduction to statistics and probability book.</li> <li>✓ Elementary statistics step by step approach / Allan G. Bluman /Fourth Edition / Mc-2 Grraw Hill/,B.A.SC.,M.A.SC.PH.D.,P.ENG.Associate Professor,Depatment</li> <li>✓ Book of principles of statistics and probability, theoretical and practicalfoundations-3</li> <li>✓ 4- Book of Statistics, Probability Theory and Application..</li> </ul> |          |                            |                                                                                                                                                                      |   |                 |

✓ Books on statistics and probability in mathematics-5

### Course Description Form

| 1- Course Name                                                                                                                                                                                                                                                                                      |                 |                    |                                                                          |       |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|--------------------------------------------------------------------------|-------|-----------------|
| Image Processing                                                                                                                                                                                                                                                                                    |                 |                    |                                                                          |       |                 |
| 2-CourseCode                                                                                                                                                                                                                                                                                        |                 |                    |                                                                          |       |                 |
| <b>SFTW408</b>                                                                                                                                                                                                                                                                                      |                 |                    |                                                                          |       |                 |
| 3-semester/ year                                                                                                                                                                                                                                                                                    |                 |                    |                                                                          |       |                 |
| Semester II 2023-2024                                                                                                                                                                                                                                                                               |                 |                    |                                                                          |       |                 |
| 4-The history of preparation of this description                                                                                                                                                                                                                                                    |                 |                    |                                                                          |       |                 |
| 19/4/2024                                                                                                                                                                                                                                                                                           |                 |                    |                                                                          |       |                 |
| 5-Available forms of attendance                                                                                                                                                                                                                                                                     |                 |                    |                                                                          |       |                 |
| Classrooms with labs                                                                                                                                                                                                                                                                                |                 |                    |                                                                          |       |                 |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                         |                 |                    |                                                                          |       |                 |
| The number of hours (75)/ Number of units (5)                                                                                                                                                                                                                                                       |                 |                    |                                                                          |       |                 |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                        |                 |                    |                                                                          |       |                 |
| Eng. Mohamed Hussein Ghaleb                                                                                                                                                                                                                                                                         |                 |                    |                                                                          |       |                 |
| 8. Course Objectives                                                                                                                                                                                                                                                                                |                 |                    |                                                                          |       |                 |
| <ul style="list-style-type: none"> <li>Recognize digital images.</li> <li>Identifying the color systems used in digital images</li> <li>Acquire theoretical and practical knowledge in the applications of digital images.</li> <li>Identify the methods used to improve digital images.</li> </ul> |                 |                    |                                                                          |       |                 |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                                                                                    |                 |                    |                                                                          |       |                 |
| <ul style="list-style-type: none"> <li>Education Strategy Plan</li> <li>Developed lecture strategy.</li> </ul>                                                                                                                                                                                      |                 |                    |                                                                          |       | OF THE STRATEGY |
| 10. Course Structure                                                                                                                                                                                                                                                                                |                 |                    |                                                                          |       |                 |
| Valuation Method                                                                                                                                                                                                                                                                                    | Learning Method | Unit or Topic Name | Intended Learning Outcomes                                               | Hours | Week            |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                            | Lectures /Lab   | Image Processing   | Introduction to Computer Vision and Image Processing                     | 5     | First Week      |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                            | Lectures /Lab   | Image Processing   | Computer Imaging System (Designing a simple System for Image Processing) | 5     | The second week |
|                                                                                                                                                                                                                                                                                                     |                 |                    |                                                                          |       |                 |

|                          |                |                  |                                                                                      |   |                 |
|--------------------------|----------------|------------------|--------------------------------------------------------------------------------------|---|-----------------|
| QUESTIONS AND DISCUSSION | Lectures /Lab  | Image Processing | Convert the Analog Image To Digital Image                                            | 5 | Week 3          |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | Image Processing | Sampling, Quantization ,Coding, The Resolution of The Digital Image                  | 5 | The fourth week |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | Image Processing | Types of image: Binary Images, Gray Scale Images, Color Images, Multispectral Images | 5 | WEEK 5          |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | Image Processing | Digital Image File Format,                                                           | 5 | Week 6          |
| Test1                    | Lectures given | Image Processing | <b>Test No . (1)</b>                                                                 | 5 | WEEK 7          |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | Image Processing | Arithmetic Operations on Images                                                      | 5 | WEEK 8          |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | Image Processing | Logical Operations on Images                                                         | 5 | Week 9          |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | Image Processing | Region of Interest Image Geometry                                                    | 5 | Week 10         |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | Image Processing | Representation of The Image using Histogram(Studying The Image From it's Histogram)  | 5 | Week 11         |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | Image Processing | Histogram modification and histogram equalization                                    | 5 | Week 12         |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | Image Processing | Spatial Filters                                                                      | 5 | Week 13         |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | Image Processing | Image compression techniques                                                         | 5 | Week 14         |
| Quiz 2                   | Lectures given | Image Processing | Quiz 2                                                                               |   | Week 15         |

#### Course Evaluation

Homework and participation in daily preparation.

Awarding the grade to students for some of the questions raised in the lecture and of a cognitive nature.

Monthly exams

#### 12. Teaching and Learning Resources

- R. C. Gonzalez and R. E. Woods., "Digital Image Processing", third edition. ISBN: 0-13-168728-x, 978-0-13-168728-8, Pearson-Prentice-Hall, 2008.
- R. C. Gonzalez, R. E. Woods, S. L. Eddins, "Digital Image Processing using Matlab", 2nd edition, ISBN: 0-13-008519-7, Pearson-Prentice-Hall, 2004.

## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                    |                                                 |       |                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|-------------------------------------------------|-------|--------------------|
| 1- Course Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                    |                                                 |       |                    |
| Operating Systems Concepts 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                    |                                                 |       |                    |
| 2-CourseCode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                    |                                                 |       |                    |
| <b>SFTW403</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                    |                                                 |       |                    |
| 3-semester/ year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                    |                                                 |       |                    |
| Semester II 2023-2024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                    |                                                 |       |                    |
| 4-The history of preparation of this description                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                    |                                                 |       |                    |
| 19/4/2024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                    |                                                 |       |                    |
| 5-Available forms of attendance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                    |                                                 |       |                    |
| Classrooms with labs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                    |                                                 |       |                    |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                    |                                                 |       |                    |
| The number of hours (60)/ Number of units (4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                    |                                                 |       |                    |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                    |                                                 |       |                    |
| Eng. Mohamed Hussein Ghaleb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                    |                                                 |       |                    |
| 9. Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                    |                                                 |       |                    |
| This course aims to introduce the student to the principles of basic operating systems and their importance to provide a complete environment of how operating systems associated with devices work, such as (devices, networks, memory) and software structure such as(scheduling and synchronization) for Windows and Linux operating systems. So that the student can understand and apply the practical aspect of operating systems more widely through simulation applications for software and operating systems. |                 |                    |                                                 |       |                    |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                    |                                                 |       |                    |
| <ul style="list-style-type: none"> <li>Education Strategy Plan</li> <li>Developed lecture strategy.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                    |                                                 |       | OF THE<br>STRATEGY |
| 10. Course Structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                    |                                                 |       |                    |
| Valuation Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Learning Method | Unit or Topic Name | Intended Learning Outcomes                      | Hours | Week               |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Lectures /Lab   | operating system   | Scheduling Algorithm (FCFS and SJF)             | 4     | First Week         |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Lectures /Lab   | operating system   | Scheduling Algorithm (Priority and Round Robin) | 4     | The second week    |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Lectures /Lab   | operating system   | Information Management (File System)            | 4     | Week 3             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                    |                                                 |       |                    |

|                          |                |                  |                                                                      |   |                 |
|--------------------------|----------------|------------------|----------------------------------------------------------------------|---|-----------------|
| QUESTIONS AND DISCUSSION | Lectures /Lab  | operating system | Access Methods (Sequential, Direct access, and other access Methods) | 4 | The fourth week |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | operating system | Directory structure (Single level, and Two level Directories)        | 4 | WEEK 5          |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | operating system | Directory structure (Tree, and Acyclic Graph Directories)            | 4 | Week 6          |
| Test1                    | Lectures given | operating system | <b>Test No . (1)</b>                                                 | 4 | WEEK 7          |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | operating system | Free-space list (Bit vector, and Linked List)                        | 4 | WEEK 8          |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | operating system | Free-space list (Grouping, and Counting)                             | 4 | Week 9          |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | operating system | Allocation methods (Contiguous, Linked, and Indexed)                 | 4 | Week 10         |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | operating system | Deadlocks definition and Deadlock Necessary conditions               | 4 | Week 11         |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | operating system | Resources-Allocation Graph (RAG)                                     | 4 | Week 12         |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | operating system | Methods for Handling Deadlocks (prevention and Avoidance)            | 4 | Week 13         |
| QUESTIONS AND DISCUSSION | Lectures /Lab  | operating system | Safe state, ARG Algorithm, and Banker's Algorithm                    | 4 | Week 14         |
| Quiz 2                   | Lectures given | operating system | <b>Quiz 2</b>                                                        | 4 | Week 15         |

### Course Evaluation

Homework and participation in daily preparation.

Awarding the grade to students for some of the questions raised in the lecture and of a cognitive nature.

Monthly exams

### 12. Teaching and Learning Resources

- Abraham Silberschatz, et al, "Operating System Concepts," 10th Copyright © 2018 John Wiley & Sons, Inc. All rights reserved.

## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                         |                                  |       |                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------|----------------------------------|-------|--------------------|
| 1- Course Name                                                                                                                                                                                                                                                                                                                                                                                |                 |                         |                                  |       |                    |
| Discrete Structures 2                                                                                                                                                                                                                                                                                                                                                                         |                 |                         |                                  |       |                    |
| 2-CourseCode                                                                                                                                                                                                                                                                                                                                                                                  |                 |                         |                                  |       |                    |
| SFTW114                                                                                                                                                                                                                                                                                                                                                                                       |                 |                         |                                  |       |                    |
| 3-semester/ year                                                                                                                                                                                                                                                                                                                                                                              |                 |                         |                                  |       |                    |
| Semester II 2023-2024                                                                                                                                                                                                                                                                                                                                                                         |                 |                         |                                  |       |                    |
| 4-The history of preparation of this description                                                                                                                                                                                                                                                                                                                                              |                 |                         |                                  |       |                    |
| 2024-2-1                                                                                                                                                                                                                                                                                                                                                                                      |                 |                         |                                  |       |                    |
| 5-Available forms of attendance                                                                                                                                                                                                                                                                                                                                                               |                 |                         |                                  |       |                    |
| Classrooms                                                                                                                                                                                                                                                                                                                                                                                    |                 |                         |                                  |       |                    |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                                                   |                 |                         |                                  |       |                    |
| The number of hours (45)/ Number of units (3)                                                                                                                                                                                                                                                                                                                                                 |                 |                         |                                  |       |                    |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                  |                 |                         |                                  |       |                    |
| Eng. Zain Al-Abidin Abbas Nasser                                                                                                                                                                                                                                                                                                                                                              |                 |                         |                                  |       |                    |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                                                                          |                 |                         |                                  |       |                    |
| 1-The student should be able to distinguish logical phrases and how to perform logical operations on them                                                                                                                                                                                                                                                                                     |                 |                         |                                  |       |                    |
| 2-The student should get to know the groups, relationships and processes                                                                                                                                                                                                                                                                                                                      |                 |                         |                                  |       |                    |
| 3-The need to identify the matrix, its type and operations on it                                                                                                                                                                                                                                                                                                                              |                 |                         |                                  |       |                    |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                                                                                                                                                                              |                 |                         |                                  |       |                    |
| ✓ <b>Active Learning:</b> Encourage students to actively apply their knowledge through exercises, lab work, and classroom issues. The more they interact with the material, the better they understand it.<br><b>Collaboration:</b> Consider allowing students to collaborate, but set clear boundaries. Equal collaboration can enhance understanding and encourage peer-to-peer discussion. |                 |                         |                                  |       | OF THE<br>STRATEGY |
| 10. Course Structure                                                                                                                                                                                                                                                                                                                                                                          |                 |                         |                                  |       |                    |
| Valuation Method                                                                                                                                                                                                                                                                                                                                                                              | Learning Method | Unit or Topic Name      | Intended Learning Outcomes       | Hours | Week               |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                      | Lectures        | Intermittent structures | Logic and propositional calculus | 3     | First Week         |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                      | Lectures        | Intermittent structures | Tautologies and contradictions   | 3     | The second week    |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                      | Lectures        | Intermittent structures | Logicalequivalence               | 3     | Week 3             |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                      | Lectures        | Intermittent structures | arguments                        | 3     | The fourth week    |
| Monthly exam(1)                                                                                                                                                                                                                                                                                                                                                                               |                 |                         |                                  | 3     | Fifteenth          |

|                                                                                                                                                                                                                                                                                                                                                                                                         |          |                         |                           |          |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------|---------------------------|----------|----------------|
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                | Lectures | Intermittent structures | Relations                 | 3        | Week 6         |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                | Lectures | Intermittent structures | Types of relations        | 3        | WEEK 8         |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                | Lectures | Intermittent structures | Compositions of relations | 3        | Week 9         |
| <b>Monthly exam(2)</b>                                                                                                                                                                                                                                                                                                                                                                                  |          |                         |                           | <b>3</b> | <b>Week 10</b> |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                | Lectures | Intermittent structures | Equivalence relations     | 3        | Week 11        |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                | Lectures | Intermittent structures | Matrices and vectors      | 3        | Week 12        |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                | Lectures | Intermittent structures | Types of Matrices         | 3        | Week 13        |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                | Lectures | Intermittent structures | Graphs                    | 3        | Week 14        |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                | Lectures | Intermittent structures | Types of Graphs           | 3        | Week 15        |
| Course Evaluation                                                                                                                                                                                                                                                                                                                                                                                       |          |                         |                           |          |                |
| <ul style="list-style-type: none"> <li>▪ Homework and participation in daily preparation.</li> <li>▪ Awarding the degree to students for some of the questions that are asked in the lecture and of a cognitive nature.</li> <li>▪ Monthly exams</li> </ul>                                                                                                                                             |          |                         |                           |          |                |
| 12. Teaching and Learning Resources                                                                                                                                                                                                                                                                                                                                                                     |          |                         |                           |          |                |
| <ul style="list-style-type: none"> <li>✓ Faleh Omran Al-Dosari, Group Theory, Umm Al-Qura University,2-2011</li> <li>✓ Adel Soran et al., Contemporary Mathematics (Theory . Collections) , Foundation for Printing and Publishing, Beirut , 1971</li> <li>✓ Adel Ghassan Naoum - Basil Al-Hashimi , Introduction to Foundations of Mathematics 2, Mathematics, University of Baghdad , 2000</li> </ul> |          |                         |                           |          |                |



## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                     |                                                                   |       |                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------|-------------------------------------------------------------------|-------|--------------------|
| 1- Course Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                     |                                                                   |       |                    |
| Operations Research                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                     |                                                                   |       |                    |
| 2-CourseCode                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                     |                                                                   |       |                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                     |                                                                   |       |                    |
| 3-semester/ year                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                     |                                                                   |       |                    |
| Semester II 2023-2024                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                     |                                                                   |       |                    |
| 4-The history of preparation of this description                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                     |                                                                   |       |                    |
| 19/4/2024                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                     |                                                                   |       |                    |
| 5-Available forms of attendance                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                     |                                                                   |       |                    |
| Classes*                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                     |                                                                   |       |                    |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                     |                                                                   |       |                    |
| The number of hours (40)/ Number of units (3)                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                     |                                                                   |       |                    |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                     |                                                                   |       |                    |
| Eng. Elaf Bahaa Alwan                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                     |                                                                   |       |                    |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                     |                                                                   |       |                    |
| <ul style="list-style-type: none"> <li>✓ Learn how to solve linear equations.</li> <li>✓ Acquire theoretical knowledge in applications of numerical example methods.</li> <li>✓ Recognize the methods used in finding computing applications.</li> <li>✓ Is to assist management in making decisions related to difficult and complex administrative problems.</li> </ul>                                                                                                           |                 |                     |                                                                   |       |                    |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                     |                                                                   |       |                    |
| <ul style="list-style-type: none"> <li>• The first step in operations research to solve a real-world problem is to identify the problem.</li> <li>• The next step is to identify the decision elements related to the problem, and then set goals and constraints. After this stage, the system is monitored and data is collected. After the data is collected, the collected data is formulated from a scientific point of view and a model of the problem is created.</li> </ul> |                 |                     |                                                                   |       | OF THE<br>STRATEGY |
| 10. Course Structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                     |                                                                   |       |                    |
| Valuation Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Learning Method | Unit or Topic Name  | Intended Learning Outcomes                                        | Hours | Week               |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Lectures        | Operations Research | Linear programming                                                | 3     | First Week         |
| Questions and Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Lectures        | Operations Research | Methods for Solving Linear Programming Models<br>Graphical Method | 3     | The second week    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Lectures        | Operations          | Algebraic method: the simplified method in                        | 3     | Week 3             |

|                                                                                                                                                                                                                                                                            |          |                     |                                                                                                 |   |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------|-------------------------------------------------------------------------------------------------|---|-----------------|
| Questions and Discussion                                                                                                                                                                                                                                                   |          | Research            | the case of a maximization-type objective function                                              |   |                 |
| Questions and Discussion                                                                                                                                                                                                                                                   | Lectures | Operations Research | Algebraic method: the simplified method in the case of the minimization-type objective function | 3 | The fourth week |
| Exam Month 1                                                                                                                                                                                                                                                               |          |                     |                                                                                                 | 2 | WEEK 5          |
| Questions and Discussion                                                                                                                                                                                                                                                   | Lectures | Operations Research | The big-m method                                                                                | 3 | Week 6          |
| Questions and Discussion                                                                                                                                                                                                                                                   | Lectures | Operations Research | Sensitivity Analysis<br>1- Changes in the right end of the restrictions                         | 3 | WEEK 8          |
| Questions and Discussion                                                                                                                                                                                                                                                   | Lectures | Operations Research | 2. Changes in coefficients of the objective function                                            | 3 | Week 9          |
| Exam Second month                                                                                                                                                                                                                                                          |          |                     |                                                                                                 | 2 | Week 10         |
| Questions and Discussion                                                                                                                                                                                                                                                   | Lectures | Operations Research | Introduction and Definition of Transport Model<br>1- Vogel technique                            | 3 | Week 11         |
| Questions and Discussion                                                                                                                                                                                                                                                   | Lectures | Operations Research | 2-A less expensive way                                                                          | 3 | Week 12         |
| Questions and Discussion                                                                                                                                                                                                                                                   | Lectures | Operations Research | networks<br>Rules for building business networks:                                               | 3 | Week 13         |
| Questions and Discussion                                                                                                                                                                                                                                                   | Lectures | Operations Research | The method of reviewing and evaluating the project PERT                                         | 3 | Week 14         |
| Questions and Discussion                                                                                                                                                                                                                                                   | Lectures | Operations Research | <b>Critical path method</b>                                                                     | 3 | <b>Week 15</b>  |
| 11. Course Evaluation                                                                                                                                                                                                                                                      |          |                     |                                                                                                 |   |                 |
| <ul style="list-style-type: none"> <li>▪ <b>Homework and participation in daily preparation.</b></li> <li>▪ <b>Giving the degree to students about some of the questions that are asked in the lecture.</b></li> <li>▪ <b>Monthly exams</b></li> </ul>                     |          |                     |                                                                                                 |   |                 |
| 12. Teaching and Learning Resources                                                                                                                                                                                                                                        |          |                     |                                                                                                 |   |                 |
| <ul style="list-style-type: none"> <li>✓ Eiselt, H. A., &amp; Sandblom, C. L. (2022). <i>Operations research: A model-based approach</i>. Springer Nature.</li> <li>✓ Taha, H. A. (2013). <i>Operations research: an introduction</i>. Pearson Education India.</li> </ul> |          |                     |                                                                                                 |   |                 |

## Course Description Form

|                                                                                                                                                    |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------|----------------------------------------------|
| <b>Course Name</b>                                                                                                                                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| compiler 2                                                                                                                                         |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| <b>1. Course number</b>                                                                                                                            |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| SFTW301                                                                                                                                            |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| <b>2. Semester/year</b>                                                                                                                            |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| 2023 – 2024                                                                                                                                        |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| <b>3. Date this description was prepared</b>                                                                                                       |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| 20 SEP 23                                                                                                                                          |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| <b>4. Available attendance forms</b>                                                                                                               |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| Actual Mandatory Attendance                                                                                                                        |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| <b>5. Number of credit hours (total) / number of units (total)</b>                                                                                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| 60 hours theoretical 60 hours practical                                                                                                            |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| <b>6. The name of the course administrator (if more than one name is mentioned)</b>                                                                |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| Theoretical and practical course officer: Eng. Baraa Mohammed Hassan<br>Email : <a href="mailto:bhassan@uowasit.edu.iq">bhassan@uowasit.edu.iq</a> |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| <b>7. Course Objectives</b>                                                                                                                        |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| <b>Objectives of the A Study</b>                                                                                                                   |              | <p>- The study of translations is mostly aimed at developing students' translation skills and enabling them to understand and apply language concepts correctly and effectively. Here are some of the main objectives of studying the subject of translators:</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> <ol style="list-style-type: none"> <li>1. <b>Developing Translation Skills:</b> It gives students the opportunity to develop written and oral translation skills, whether from one mother tongue to another or between two foreign languages.</li> <li>2. <b>Deeper understanding of languages:</b> It allows students to have a deeper understanding of the languages they are studying, including grammar, grammar and syntax, which helps them to apply this understanding in translation accurately and effectively.</li> </ol> </div> |                           |                           |                                              |
| <b>8. Teaching and learning strategies</b>                                                                                                         |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| <b>OF THE STRATE</b>                                                                                                                               |              | <ol style="list-style-type: none"> <li>1- Employing Practical Examples</li> <li>2- Discussions and effective exchange of ideas</li> <li>3- Foster collaboration and teamwork</li> <li>4- Providing parallel theoretical lessons with practical applications</li> <li>5- Encourage self-exploration and continuous learning</li> <li>6- Interactive learning strategy.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                           |                           |                                              |
| <b>9. Course Structure</b>                                                                                                                         |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                                              |
| <b>Week</b>                                                                                                                                        | <b>hours</b> | <b>Intended Learning Outcomes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Unit or Topic Name</b> | <b>Learning Method</b>    | <b>Valuation Method</b>                      |
|                                                                                                                                                    |              | algorithm of converting any transition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Compiler 2                | Theoretical and practical | 1-Conducting theoretical and practical tests |

|       |   |                                                                                                                                                                                                                                        |            |                                                                                                                                                       |                                                                                                                                                                                                             |
|-------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1-8   | 4 | diagram (T.D) to non-deterministic finite state automata (NDFSA) 2- algorithm of converting NDFSA to DFSA                                                                                                                              |            | lectures and practical application in the laboratory and the use of the group system to solve problems and blended learning                           | (daily and quarterly)<br>2-Seminars (assigning students topics)<br>3-Using the aggregate system to complete mini-projects<br>4-Daily questions and discussions                                              |
| 9-16  | 4 | minimize and FSA acceptor (recognizer) algorithm.//AHO algorithm for tokens recognition.//reviewing//syntax analysis: - architecture of parsing , grammar derivation (right-most and left-most)                                        | Compiler 2 | Theoretical and practical lectures and practical application in the laboratory 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 topics)<br>3-Using the aggregate system to complete mini-projects<br>4-Daily questions and discussions |
| 17-22 | 4 | recursion ,its types (immediate left recursion and not immediate left recursion)//elimination of left recursion//first and follow algorithm//top-wn parser//bottom up parser ( shift reduce parser ) with specifying of handl          | Compiler 2 | Theoretical and practical lectures and practical application in the laboratory 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 topics)<br>3-Using the aggregate system to complete mini-projects<br>4-Daily questions and discussions |
| 23-27 | 4 | operator precedence parser//LR parser//SLR parser//LALR parser//syntax directed translation//reviewing//semantic analyzer: - static semantic checks , dynamic semantic check example                                                   | Compiler 2 | Theoretical and practical lectures and practical application in the laboratory 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 topics)<br>3-Using the aggregate system to complete mini-projects<br>4-Daily questions and discussions |
| 28-30 | 4 | intermediate code generation polish notation (infix , prefix , postfix)//triples , three address code, quadruples, converting between one code type to another//reviewing//code optimizer: - introduction , principles of optimization | Compiler 2 | Theoretical and practical lectures and practical application in the laboratory 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 topics)<br>3-Using the aggregate system to complete mini-projects<br>4-Daily questions and discussions |

#### 10. Course Evaluation

Homework and participation in daily preparation.

Awarding the grade to students for some of the questions raised in the lecture and of a cognitive nature.

Monthly exams

#### 11. Learning and Teaching Resources

- "SSA-based Compiler Design"
- Introduction to Compilers and Language Design

## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                                                                                                       |                            |        |                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------|----------------------------|--------|----------------------------|
| 1- Course Name                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                                                                                                       |                            |        |                            |
| Mathematics 2                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                                                                                                       |                            |        |                            |
| 2-CourseCode                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                                                                                                       |                            |        |                            |
| SFTW110                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                                                                                                       |                            |        |                            |
| 3-semester/ year                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                                                                                                       |                            |        |                            |
| Semester II 2023-2024                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |                                                                                                       |                            |        |                            |
| 4-The history of preparation of this description                                                                                                                                                                                                                                                                                                                                                                                       |                 |                                                                                                       |                            |        |                            |
| 21/4/2024                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                                                                       |                            |        |                            |
| 5-Available forms of attendance                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                                                                                                       |                            |        |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                                                                                                       |                            |        |                            |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                                                                                            |                 |                                                                                                       |                            |        |                            |
| The number of hours (40)/ Number of units (3)                                                                                                                                                                                                                                                                                                                                                                                          |                 |                                                                                                       |                            |        |                            |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                                                           |                 |                                                                                                       |                            |        |                            |
| Eng.Ahmed Mohammed Adkhil                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                                                                       |                            |        |                            |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                       |                            |        |                            |
| <p><b>This course examines the mathematical elements of computer science. Topics include proposed logic. predicate logic; mathematical</b></p> <p><b>Logic; proof techniques; mathematical deduction; set theory; number theory; matrices. Sequences and Combinations; Functions, Relationships and Their Characteristics, Elementary Graph Theory, and the Tree</b></p>                                                               |                 |                                                                                                       |                            |        |                            |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                                                                                                       |                            |        |                            |
| <ul style="list-style-type: none"> <li>The main strategy to be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classroom and interactive tutorials and by looking at the types of simple experiences that include some interesting sampling activities for students</li> </ul> |                 |                                                                                                       |                            |        | <b>OF THE<br/>STRATEGY</b> |
| 10. Course Structure                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                       |                            |        |                            |
| Valuation Method                                                                                                                                                                                                                                                                                                                                                                                                                       | Learning Method | Unit or Topic Name                                                                                    | Intended Learning Outcomes | Hours  | Week                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | Solution of non-linear equations, Newton Raphson method for .                                         |                            | 3hours | First Week                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | Numerical differentiation and numerical integration, The Solutions of Integral equations, Trapezoidal |                            | 3hours | The second week            |

|                                                                                                                                                                                                                                                                                      |  |                                                                                           |  |          |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------|--|----------|-----------------|
|                                                                                                                                                                                                                                                                                      |  | <b>methodSimpsons method</b>                                                              |  |          |                 |
|                                                                                                                                                                                                                                                                                      |  | <b>Simpsons method(3/8)</b>                                                               |  | 3hours   | Week 3          |
|                                                                                                                                                                                                                                                                                      |  | <b>Fourier series for odd and even functions ,Half range Fourier sin andcosine series</b> |  | 3hours   | The fourth week |
| <b>Exam Month 1</b>                                                                                                                                                                                                                                                                  |  |                                                                                           |  | <b>2</b> |                 |
|                                                                                                                                                                                                                                                                                      |  | <b>Change of interval</b>                                                                 |  | 3hours   | Week 6          |
|                                                                                                                                                                                                                                                                                      |  | <b>Formation of Partial differential equations</b>                                        |  | 3hours   | WEEK 8          |
|                                                                                                                                                                                                                                                                                      |  | <b>Types of partial differential equations,wave equation,heat equation</b>                |  | 3hours   | Week 9          |
| <b>Exam Month 2</b>                                                                                                                                                                                                                                                                  |  |                                                                                           |  | <b>2</b> |                 |
|                                                                                                                                                                                                                                                                                      |  | <b>Numerical differentiation, Euler method, modified Euler method</b>                     |  | 3hours   | Week 11         |
|                                                                                                                                                                                                                                                                                      |  | <b>Rung Kutta method, Rung Kutta-merson method</b>                                        |  | 3hours   | Week 12         |
|                                                                                                                                                                                                                                                                                      |  | <b>Numerical analysis,Elimination and iterative methods</b>                               |  | 3hours   | Week 13         |
|                                                                                                                                                                                                                                                                                      |  | <b>Cramer's rule, solve by inverse matrices</b>                                           |  | 3hours   | Week 14         |
|                                                                                                                                                                                                                                                                                      |  | <b>examination</b>                                                                        |  | 2        | Week 15         |
| <b>Course Evaluation</b>                                                                                                                                                                                                                                                             |  |                                                                                           |  |          |                 |
|                                                                                                                                                                                                                                                                                      |  |                                                                                           |  |          |                 |
| <b>12. Teaching and Learning Resources</b>                                                                                                                                                                                                                                           |  |                                                                                           |  |          |                 |
| <b>Thomas Calculus', XII, George B. Thomas Jr., Maurice D. Weir, Joel R. Haas, 2009 Differential Equations (Schumm Outline Series).</b><br><b>Thomas Calculus", 12thED,George B. Thomas Jr., Maurice D. Weir, Joel R. Hass, 2009Differential Equations (Schaum's Outlin Series).</b> |  |                                                                                           |  |          |                 |

## Course Description Form

|                                                                                                                                                                                                                                                                           |                 |                               |                                     |       |                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|-------------------------------------|-------|--------------------|
| 1- Course Name                                                                                                                                                                                                                                                            |                 |                               |                                     |       |                    |
| Computation Theory2                                                                                                                                                                                                                                                       |                 |                               |                                     |       |                    |
| 2-CourseCode                                                                                                                                                                                                                                                              |                 |                               |                                     |       |                    |
| SFTW212                                                                                                                                                                                                                                                                   |                 |                               |                                     |       |                    |
| 3-semester/ year                                                                                                                                                                                                                                                          |                 |                               |                                     |       |                    |
| Semester II 2023-2024                                                                                                                                                                                                                                                     |                 |                               |                                     |       |                    |
| 4-The history of preparation of this description                                                                                                                                                                                                                          |                 |                               |                                     |       |                    |
| 1/2/2024                                                                                                                                                                                                                                                                  |                 |                               |                                     |       |                    |
| 5-Available forms of attendance                                                                                                                                                                                                                                           |                 |                               |                                     |       |                    |
| Classrooms                                                                                                                                                                                                                                                                |                 |                               |                                     |       |                    |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                               |                 |                               |                                     |       |                    |
| The number of hours (45)/ Number of units (3)                                                                                                                                                                                                                             |                 |                               |                                     |       |                    |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                              |                 |                               |                                     |       |                    |
| No.Eng. Maryam Jawad Kazem                                                                                                                                                                                                                                                |                 |                               |                                     |       |                    |
| 8. Course Objectives                                                                                                                                                                                                                                                      |                 |                               |                                     |       |                    |
| 1. Clarifying the basic concepts in computational theory through a set of tools.<br>2. Gain skills in tackling the problem.<br>3. Gain skills as an introduction to language building<br>Acquiring theoretical concepts to deal with(DFA,NFA, turning machine,grammers..) |                 |                               |                                     |       |                    |
| 9.Teaching and learning strategies                                                                                                                                                                                                                                        |                 |                               |                                     |       |                    |
| 1. Ability to design FAs, NFAs, Grammars, languages modeling, compilers basics<br>2. The ability to think about addressing the problem using certain rules and the ability to write a scientific report<br>3. Knowing the comparison between Natural and Formal Language  |                 |                               |                                     |       | OF THE<br>STRATEGY |
| 10. Course Structure                                                                                                                                                                                                                                                      |                 |                               |                                     |       |                    |
| Valuation Method                                                                                                                                                                                                                                                          | Learning Method | Unit or Topic Name            | Intended Learning Outcomes          | Hours | Week               |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                  | Lectures        | Introduction, languages       | Set,string,alpha bets, language     | 3     | First Week         |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                  | Lectures        | Regular Expression            | Introduction to Regular Expressions | 3     | The second week    |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                  | Lectures        | Finite automata               | FA                                  | 3     | Week 3             |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                  | Lectures        | Deterministic finite automata | DFA                                 | 3     | The fourth week    |
| Exam Month 1                                                                                                                                                                                                                                                              |                 |                               |                                     | 3     | Week 5             |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                  | Lectures        | Convert NFA to DFA            | Convert NFA to DFA                  | 3     | Week 6             |

|                                                                                                                                                                                                                                                        |                 |                                       |                                                |   |                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------|------------------------------------------------|---|----------------|
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                               | <b>Lectures</b> | Equivalence of mealy and moor machine | Equivalence between Moore and Mealy Machine    | 3 | WEEK 8         |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                               | <b>Lectures</b> | Pushdown automata                     | PDA                                            | 3 | Week 9         |
| Exam Second month                                                                                                                                                                                                                                      |                 |                                       |                                                | 3 | <b>Week 10</b> |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                               | <b>Lectures</b> | Regular grammar, Left linear grammar  | Left linear grammar                            | 3 | Week 11        |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                               | <b>Lectures</b> | Right linear grammar                  | Right linear grammar                           | 3 | Week 12        |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                               | <b>Lectures</b> | Trees, left and right most derivation | Derivation Tree(LMD,RMD Simplification of CFGs | 3 | Week 13        |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                               | <b>Lectures</b> | Turing machine                        | TMS                                            | 3 | Week 14        |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                               | <b>Lectures</b> | Turing machine                        | Turing machine                                 | 3 | Week 15        |
| <b>Course Evaluation</b>                                                                                                                                                                                                                               |                 |                                       |                                                |   |                |
| <ul style="list-style-type: none"> <li>▪ <b>Homework and participation in daily preparation.</b></li> <li>▪ <b>Giving the degree to students about some of the questions that are asked in the lecture.</b></li> <li>▪ <b>Monthly exams</b></li> </ul> |                 |                                       |                                                |   |                |
| <b>12. Teaching and Learning Resources</b>                                                                                                                                                                                                             |                 |                                       |                                                |   |                |
| 1. Papadimitriou, Elements of the Theory of Computation, Prentice-Hall, 1998<br>2. John E. Hopcroft, Rajeev Motwani, Jeffrey D. Ullman, "Introduction to Automata Theory, Languages, and Computation", Second Edition, Prentice-Hall, 2001             |                 |                                       |                                                |   |                |

### Course Description Form

|                                                  |
|--------------------------------------------------|
| 1- Course Name                                   |
| English Language - stage 4 - Software Department |
| 2-CourseCode                                     |
| UWEN402                                          |
| 3-semester/ year                                 |
| Semester II 2023-2024                            |
| 4-The history of preparation of this description |
| April 18, 2001                                   |
| 5-Available forms of attendance                  |



| Attendance                                                                                                                                                                                                                                                                                                                  |                  |                                          |                                                                             |       |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------|-----------------------------------------------------------------------------|-------|-----------------|
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                 |                  |                                          |                                                                             |       |                 |
| The number of hours (30)/ Number of units (2)                                                                                                                                                                                                                                                                               |                  |                                          |                                                                             |       |                 |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                |                  |                                          |                                                                             |       |                 |
| Haidar Okab Alwan                                                                                                                                                                                                                                                                                                           |                  |                                          |                                                                             |       |                 |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                        |                  |                                          |                                                                             |       |                 |
| <b>This course mainly focuses on reading and writing articles and how to start writing and analyzing any paragraphs to the main idea and supporting details. Dozens of new useful vocabulary will be present on the first page of each chapter, and finally a set of grammar rules will also be covered in this course.</b> |                  |                                          |                                                                             |       |                 |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                                                                                                            |                  |                                          |                                                                             |       |                 |
| <ul style="list-style-type: none"> <li>This course in English for students of the fourth stage aims to develop some basic skills such as listening and speaking and adding new vocabulary as well as a review of the subject of times and how to distinguish between them .</li> </ul>                                      |                  |                                          |                                                                             |       | OF THE STRATEGY |
| 10. Course Structure                                                                                                                                                                                                                                                                                                        |                  |                                          |                                                                             |       |                 |
| Valuation Method                                                                                                                                                                                                                                                                                                            | Learning Method  | Unit or Topic Name                       | Intended Learning Outcomes                                                  | Hours | Week            |
| <b>Editorial tests</b>                                                                                                                                                                                                                                                                                                      | <b>Data Show</b> | <b>Chapter 1; It's a wonderful world</b> | <b>Tenses, Shorts answers in English: Tenses ,Shorts answers</b>            | 2     | First Week      |
| ==                                                                                                                                                                                                                                                                                                                          | ==               | <b>Auxiliary verbs</b>                   | <b>Social expression</b>                                                    | 2     | Week Second     |
| ==                                                                                                                                                                                                                                                                                                                          | ==               | Wonders of the World                     | Critical reading skills<br>Reading Skills                                   | 2     | Week 3          |
| ==                                                                                                                                                                                                                                                                                                                          | ==               | Chapter 2<br>Getting happy:              | Simple and continuous present time<br>Present simple and present continuous | 2     | The fourth week |
| Exam Month 1                                                                                                                                                                                                                                                                                                                |                  |                                          |                                                                             | 2     | WEEK 5          |
| ==                                                                                                                                                                                                                                                                                                                          | ==               | Reading Skills:The Clown Doctor          | passively<br>Passive Voice                                                  | 2     | Week 6          |
| ==                                                                                                                                                                                                                                                                                                                          | ==               | Sport and leisure                        | vocabulary                                                                  | 2     | WEEK 8          |
| ==                                                                                                                                                                                                                                                                                                                          | ==               | Chapter Three: Telling Tales             | Past Simple tense<br>Past simple tense                                      | 2     | Week 9          |
| Exam Month 1                                                                                                                                                                                                                                                                                                                |                  |                                          |                                                                             | 2     | Week 10         |
| ==                                                                                                                                                                                                                                                                                                                          | ==               | Vocabulary on Arts and Literature        | Art and Literature<br>Art and Literature                                    | 2     | Week 11         |
| ==                                                                                                                                                                                                                                                                                                                          | ==               | The painter and the writer               | Reading and Conversation<br>Reading, Speaking and Writing                   | 2     | Week 12         |

|                                                                                                                                                                                                                                   |    |                                                |                            |   |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------|----------------------------|---|---------|
| ==                                                                                                                                                                                                                                | == | Giving opinion: Giving opinion                 | Listening and Writing      | 2 | Week 13 |
| ==                                                                                                                                                                                                                                | == | Chapter Four: Chapter 4: Doing the Right Thing | Model verb: Standard verbs | 2 | Week 14 |
| ==                                                                                                                                                                                                                                | == | Use should and Must                            | Obligation and Permission  | 2 | Week 15 |
| Course Evaluation                                                                                                                                                                                                                 |    |                                                |                            |   |         |
| Distribution of the degree of the pursuit, which is 40 degrees, according to the tasks assigned to the student, such as daily preparation and daily, oral and monthly examinations. The theoretical final exam is of 60 degrees . |    |                                                |                            |   |         |
| . TEACHING AND LEARNING                                                                                                                                                                                                           |    |                                                |                            |   |         |
| Headway plus-Intermediate level<br>Skill for success- Reading & writing.                                                                                                                                                          |    |                                                |                            |   |         |

### Course Description Form

|                                                                                                                                                                                  |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 1- Course Name                                                                                                                                                                   |                 |
| Research Groups                                                                                                                                                                  |                 |
| 2-CourseCode                                                                                                                                                                     |                 |
|                                                                                                                                                                                  |                 |
| 3-semester/ year                                                                                                                                                                 |                 |
| 2024-2023 / Second semester                                                                                                                                                      |                 |
| 4-The history of preparation of this description                                                                                                                                 |                 |
| 8 February 2024                                                                                                                                                                  |                 |
| 5-Available forms of attendance                                                                                                                                                  |                 |
| Classrooms with labs                                                                                                                                                             |                 |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                      |                 |
| The number of hours (43)/ Number of units (3)                                                                                                                                    |                 |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                     |                 |
| Name: Prof. Dr. Sarraj Razouki Abbas<br>Email : <a href="mailto:sabbas@uowasit.edu.iq">sabbas@uowasit.edu.iq</a>                                                                 |                 |
| 8. Course Objectives                                                                                                                                                             |                 |
| <ul style="list-style-type: none"> <li>✓ Teaching students the concepts of scientific research</li> <li>✓ How to write research papers.</li> </ul>                               |                 |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                 |                 |
| <ul style="list-style-type: none"> <li>• Develop the student's research skills.</li> <li>• Scientific Research Methodss</li> <li>• Clarify and explain course topics.</li> </ul> | OF THE STRATEGY |

| 10. Course Structure     |                      |                    |                                                                                                                                                                       |       |                 |
|--------------------------|----------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------|
| Valuation Method         | Learning Method      | Unit or Topic Name | Intended Learning Outcomes                                                                                                                                            | Hours | Week            |
| Questions and Discussion | Lectures/ Lab        | Research Groups    | The concept of scientific research                                                                                                                                    | 3     | First Week      |
| Questions and Discussion | Lectures/ Lab        | Research Groups    | Qualities of the scientific researcher and motivations of the researcher                                                                                              | 3     | The second week |
| Questions and Discussion | Lectures/ Lab        | Research Groups    | The research problem, the sources of identifying the problem , the specifications of the problem, the originality of the problem                                      | 3     | Week 3          |
| Questions and Discussion | Lectures/ Lab        | Research Groups    | Formulating the problem, determining the importance of the problem                                                                                                    | 3     | The fourth week |
| Questions and Discussion | Lectures/ Lab        | Research Groups    | The importance of scientific research, determining the importance of scientific research                                                                              | 3     | WEEK 5          |
| Questions and Discussion | Lectures/ Lab        | Research Groups    | Objectives of Scientific Research/ Formulation of Objectives , Determination of the Method of Scientific Research, Determination of the Method of Scientific Research | 3     | Week 6          |
| Exam                     | Given substance info | Month 1            | 2                                                                                                                                                                     |       | WEEK 7          |
| Questions and Discussion | Lectures/ Lab        | Research Groups    | Determinants of scientific research, terms of scientific research, hypotheses of scientific research, questions of scientific research                                | 3     | WEEK 8          |
| Questions and Discussion | Lectures/ Lab        | Research Groups    | Direct Assumptions and Indirect Assumptions                                                                                                                           | 3     | Week 9          |
| Questions and Discussion | Lectures/ Lab        | Research Groups    | Nature of Research Methods, Types of Research Methods                                                                                                                 | 3     | Week 10         |
| Questions and Discussion | Lectures/ Lab        | Research Groups    | The axioms of scientific research, a review of intellectual production                                                                                                | 3     | Week 11         |
| Questions and Discussion | Lectures/ Lab        | Research Groups    | Literature or background of scientific research                                                                                                                       | 3     | Week 12         |
| Questions and Discussion | Lectures/ Lab        | Research Groups    | Literature Review                                                                                                                                                     | 3     | Week 13         |

|                                                                                                                                                                                                                                                       |                      |                 |                                                                                                 |   |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------|-------------------------------------------------------------------------------------------------|---|---------|
| Questions and Discussion                                                                                                                                                                                                                              | Lectures/ Lab        | Research Groups | Criteria for testing intellectual production, indications for reviewing intellectual production | 3 | Week 14 |
| Exam                                                                                                                                                                                                                                                  | Given substance info | Second month    | 2                                                                                               |   | Week 15 |
| Course Evaluation                                                                                                                                                                                                                                     |                      |                 |                                                                                                 |   |         |
| <ul style="list-style-type: none"> <li>Homework and participation in daily preparation.</li> <li>Awarding the degree to students for some of the questions that are asked in the lecture and of a cognitive nature.</li> <li>Monthly exams</li> </ul> |                      |                 |                                                                                                 |   |         |
| 12. Teaching and Learning Resources                                                                                                                                                                                                                   |                      |                 |                                                                                                 |   |         |
| ✓ Methods of Scientific Research by Rashid Abdul Aziz Hafez.                                                                                                                                                                                          |                      |                 |                                                                                                 |   |         |

|                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1- Course Name                                                                                                                                                                                                                                                                                                                                                 |
| Artificial Intelligence                                                                                                                                                                                                                                                                                                                                        |
| 2-CourseCode                                                                                                                                                                                                                                                                                                                                                   |
| SFTW309                                                                                                                                                                                                                                                                                                                                                        |
| 3-semester/ year                                                                                                                                                                                                                                                                                                                                               |
| Semester II 2023-2024                                                                                                                                                                                                                                                                                                                                          |
| 4-The history of preparation of this description                                                                                                                                                                                                                                                                                                               |
| 1/2/2024                                                                                                                                                                                                                                                                                                                                                       |
| 5-Available forms of attendance                                                                                                                                                                                                                                                                                                                                |
| Classrooms                                                                                                                                                                                                                                                                                                                                                     |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                    |
| The number of hours (60)/ Number of units (4)                                                                                                                                                                                                                                                                                                                  |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                   |
| No.Eng. Maryam Jawad Kazem                                                                                                                                                                                                                                                                                                                                     |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                                           |
| <ul style="list-style-type: none"> <li>Learn about the basic concepts and principles of artificial intelligence and its various sub-fields.</li> <li>Understand AI problem-solving techniques.</li> <li>Explore real-world applications of AI in various fields and understand the challenges and opportunities associated with its implementation.</li> </ul> |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                                                                                                                                               |

| <ul style="list-style-type: none"> <li>Studying the methods and languages used to represent and process knowledge in artificial intelligence systems.</li> <li>Study real-world applications of AI in different fields, such as healthcare, finance, self-driving vehicles, robotics, and recommendation systems</li> </ul> |                 |                                                                                |                                                                 |       | OF THE STRATEGY |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------|-------|-----------------|
| 10. Course Structure                                                                                                                                                                                                                                                                                                        |                 |                                                                                |                                                                 |       |                 |
| Valuation Method                                                                                                                                                                                                                                                                                                            | Learning Method | Unit or Topic Name                                                             | Intended Learning Outcomes                                      | Hours | Week            |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                    | Lectures /Lab   | AI definition, history, concept, and applications, AI goals and AI environment | Basic Concepts of Artificial Intelligence                       | 4     | First Week      |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                    | Lectures /Lab   | Data-Information Knowledge ,DIK Hierarchy                                      | Principles of Artificial Intelligence and its various sub-areas | 4     | The second week |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                    | Lectures /Lab   | Knowledge base building                                                        | Artificial Intelligence Technologies                            | 4     | Week 3          |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                    | Lectures /Lab   | Heuristic Search                                                               | A* algorithm                                                    | 4     | The fourth week |
| Exam Month 1                                                                                                                                                                                                                                                                                                                |                 |                                                                                |                                                                 | 4     |                 |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                    | Lectures /Lab   | Heuristic Search                                                               | Hill Climbing Algorithm                                         | 4     | Week 6          |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                    | Lectures /Lab   | Heuristic Search                                                               | Knowledge Representation                                        | 4     | WEEK 8          |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                    | Lectures /Lab   | Knowledge base building                                                        | Artificial Intelligence Technologies                            | 4     | Week 9          |
| Exam Second month                                                                                                                                                                                                                                                                                                           |                 |                                                                                |                                                                 | 4     | Week 10         |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                    | Lectures /Lab   | Shortest path problem                                                          | Different Problems in the World of Artificial Intelligence      | 4     | Week 11         |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                    | Lectures /Lab   | Uninformed Search(Blind Search)                                                | Breadth first search algorithm (BFS)                            | 4     | Week 12         |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                    | Lectures /Lab   | Uninformed Search(Blind Search)                                                | Cost Search Algorithm (UCS)                                     | 4     | Week 13         |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                    | Lectures /Lab   | Uninformed Search(Blind Search)                                                | Depth First Search (DFS) algorithm                              | 4     | Week 14         |
| QUESTIONS AND DISCUSSION                                                                                                                                                                                                                                                                                                    | Lectures /Lab   | machine learning                                                               | Machine Learning                                                | 4     | Week 15         |
| Course Evaluation                                                                                                                                                                                                                                                                                                           |                 |                                                                                |                                                                 |       |                 |
| <ul style="list-style-type: none"> <li><b>Homework and participation in daily preparation.</b></li> </ul>                                                                                                                                                                                                                   |                 |                                                                                |                                                                 |       |                 |

- Giving the degree to students about some of the questions that are asked in the lecture.
- Monthly exams

## 12. Teaching and Learning Resources

1. Rich, E., & Knight, K. (1991). Artificial Intelligence McGraw-Hill.
2. Luger, G. F., & Stubblefield, W. A. (2004). Artificial Intelligence: Structures and Strategies for Complex Problem Solving. Addison-Wesley.

## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                                    |                                    |       |                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------------------------|------------------------------------|-------|----------------------------|
| 1- Course Name                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                                    |                                    |       |                            |
| Information Theory                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                                    |                                    |       |                            |
| 2-CourseCode                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                    |                                    |       |                            |
| SFTW204                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                                    |                                    |       |                            |
| 3-semester/ year                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                                    |                                    |       |                            |
| Semester II 2023-2024                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                                    |                                    |       |                            |
| 4-The history of preparation of this description                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                                    |                                    |       |                            |
| 1/2/2024                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                                    |                                    |       |                            |
| 5-Available forms of attendance                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                                    |                                    |       |                            |
| Lectures + Lab                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                                    |                                    |       |                            |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                                    |                                    |       |                            |
| The number of hours (56)/ Number of units (4)                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |                                    |                                    |       |                            |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                    |                                    |       |                            |
| Eng. Hussein Ali Matar                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                                    |                                    |       |                            |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                                    |                                    |       |                            |
| <ol style="list-style-type: none"> <li>1. Teaching students the basics of information systems</li> <li>2. Teaching students' information systems techniques</li> <li>3. Teaching students the mathematical foundations of various information systems.</li> <li>4. Teaching students the basics of digital systems analytics and supporting technologies</li> <li>5. Teaching students case studies and various applications of information theory.</li> </ol> |                 |                                    |                                    |       |                            |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                                    |                                    |       |                            |
| Explaining the scientific material on the blackboard and on the projector<br>Encouraging students to participate in solving problems and explaining on the board<br>Allocating a percentage of the grade to group activities<br>Assigning the student to some group tasks and activities<br>Applying scientific material in the laboratory by implementing simulation programs.                                                                                |                 |                                    |                                    |       | <b>OF THE<br/>STRATEGY</b> |
| 10. Course Structure                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                                    |                                    |       |                            |
| Valuation Method                                                                                                                                                                                                                                                                                                                                                                                                                                               | Learning Method | Unit or Topic Name                 | Intended Learning Outcomes         | Hours | Week                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | Principles of probability theory   | Principles of probability theory   | 4     | First Week                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | Introduction to information theory | Introduction to information theory | 4     | The second week            |

|                                                                                      |  |                                          |                                          |   |                 |
|--------------------------------------------------------------------------------------|--|------------------------------------------|------------------------------------------|---|-----------------|
|                                                                                      |  | Mode of the signal system                | Mode of the signal system                | 4 | Week 3          |
|                                                                                      |  | Some code: ASCII code & Morse code       | Some code: ASCII code & Morse code       | 4 | The fourth week |
| Exam Month 1                                                                         |  |                                          |                                          | 4 | WEEK 5          |
|                                                                                      |  | The measure of information               | The measure of information               | 4 | Week 6          |
|                                                                                      |  | Information                              | Information                              | 4 | WEEK 7          |
|                                                                                      |  | Average information (Entropy)            | Average information (Entropy)            | 4 | WEEK 8          |
| Second month                                                                         |  |                                          |                                          | 2 | Week 9          |
|                                                                                      |  | Maximum Entropy for Discrete Source Text | Maximum Entropy for Discrete Source Text | 4 | Week 10         |
|                                                                                      |  | Binary source                            | Binary source                            | 4 | Week 11         |
|                                                                                      |  | Ternary Source                           | Ternary Source                           | 4 | Week 12         |
|                                                                                      |  | Information Rate                         | Information Rate                         | 4 | Week 13         |
|                                                                                      |  | Mutual information                       | Mutual information                       | 4 | Week 14         |
| Course Evaluation                                                                    |  |                                          |                                          |   |                 |
| Participate in daily duties<br>Providing activities<br>Daily exams and monthly exams |  |                                          |                                          |   |                 |
| 12. Teaching and Learning Resources                                                  |  |                                          |                                          |   |                 |
| - Elements Of Information Theory, Thomas M. Cover Joy A. Thomas                      |  |                                          |                                          |   |                 |



## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                 |                 |                               |                               |       |                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|-------------------------------|-------|--------------------|
| 1- Course Name                                                                                                                                                                                                                                                                                                                                                                  |                 |                               |                               |       |                    |
| Logical Design                                                                                                                                                                                                                                                                                                                                                                  |                 |                               |                               |       |                    |
| 2-CourseCode                                                                                                                                                                                                                                                                                                                                                                    |                 |                               |                               |       |                    |
| CSIT102                                                                                                                                                                                                                                                                                                                                                                         |                 |                               |                               |       |                    |
| 3-semester/ year                                                                                                                                                                                                                                                                                                                                                                |                 |                               |                               |       |                    |
| Semester II 2023-2024                                                                                                                                                                                                                                                                                                                                                           |                 |                               |                               |       |                    |
| 4-The history of preparation of this description                                                                                                                                                                                                                                                                                                                                |                 |                               |                               |       |                    |
| 1/2/2024                                                                                                                                                                                                                                                                                                                                                                        |                 |                               |                               |       |                    |
| 5-Available forms of attendance                                                                                                                                                                                                                                                                                                                                                 |                 |                               |                               |       |                    |
| Lectures + Lab                                                                                                                                                                                                                                                                                                                                                                  |                 |                               |                               |       |                    |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                                     |                 |                               |                               |       |                    |
| The number of hours (56)/ Number of units (4)                                                                                                                                                                                                                                                                                                                                   |                 |                               |                               |       |                    |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                    |                 |                               |                               |       |                    |
| Eng. Hussein Ali Matar                                                                                                                                                                                                                                                                                                                                                          |                 |                               |                               |       |                    |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                                                            |                 |                               |                               |       |                    |
| 1-The student should understand encoder, decoder and multiplexers<br>The student should understand flip-flops and how to use them.<br>3-The student should understand synchronization and counters<br>4-The student should understand ROM and PLA.                                                                                                                              |                 |                               |                               |       |                    |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                                                                                                                                                                |                 |                               |                               |       |                    |
| Explaining the scientific material on the blackboard and on the projector<br>Encouraging students to participate in solving problems and explaining on the board<br>Allocating a percentage of the grade to group activities<br>Assigning the student to some group tasks and activities<br>Applying scientific material in the laboratory by implementing simulation programs. |                 |                               |                               |       | OF THE<br>STRATEGY |
| 10. Course Structure                                                                                                                                                                                                                                                                                                                                                            |                 |                               |                               |       |                    |
| Valuation Method                                                                                                                                                                                                                                                                                                                                                                | Learning Method | Unit or Topic Name            | Intended Learning Outcomes    | Hours | Week               |
|                                                                                                                                                                                                                                                                                                                                                                                 |                 | Synchronous logic gates       | Synchronous logic gates       | 4     | First Week         |
|                                                                                                                                                                                                                                                                                                                                                                                 |                 | Adder and subtractor circuits | Adder and subtractor circuits | 4     | The second week    |
|                                                                                                                                                                                                                                                                                                                                                                                 |                 | Comparator circuits           | Comparator circuits           | 4     | Week 3             |
|                                                                                                                                                                                                                                                                                                                                                                                 |                 | Encoders                      | Encoders                      | 4     | The fourth week    |

|                                                                                      |  |                                |                                |   |         |
|--------------------------------------------------------------------------------------|--|--------------------------------|--------------------------------|---|---------|
| Exam Month 1                                                                         |  |                                |                                | 4 | WEEK 5  |
|                                                                                      |  | Multiplexers                   | Multiplexers                   | 4 | Week 6  |
|                                                                                      |  | SR flip flop and j k flip flop | SR flip flop and j k flip flop | 4 | WEEK 8  |
|                                                                                      |  | T flip flop and D flip flop    | T flip flop and D flip flop    | 4 | Week 9  |
| Exam month 2                                                                         |  |                                |                                | 4 | Week 10 |
|                                                                                      |  | Registers design               | Registers design               | 4 | Week 11 |
|                                                                                      |  | Counters design                | Counters design                | 4 | Week 12 |
|                                                                                      |  | ROM*                           | ROM                            | 4 | Week 13 |
|                                                                                      |  | PLA                            | PLA                            | 4 | Week 14 |
|                                                                                      |  | Review all topics              | Review all topics              | 4 | Week 15 |
| Course Evaluation                                                                    |  |                                |                                |   |         |
| Participate in daily duties<br>Providing activities<br>Daily exams and monthly exams |  |                                |                                |   |         |
| 12. Teaching and Learning Resources                                                  |  |                                |                                |   |         |
| Participate in daily duties<br>Providing activities<br>Daily exams and monthly exams |  |                                |                                |   |         |

## Course Description Form

|                                                                                                                                                                     |                 |                    |                                                                                                                                             |       |                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------|
| 1- Course Name                                                                                                                                                      |                 |                    |                                                                                                                                             |       |                    |
| Web Design                                                                                                                                                          |                 |                    |                                                                                                                                             |       |                    |
| 2-CourseCode                                                                                                                                                        |                 |                    |                                                                                                                                             |       |                    |
| SFTW300                                                                                                                                                             |                 |                    |                                                                                                                                             |       |                    |
| 3-semester/ year                                                                                                                                                    |                 |                    |                                                                                                                                             |       |                    |
| Semester II 2023-2024                                                                                                                                               |                 |                    |                                                                                                                                             |       |                    |
| 4-The history of preparation of this description                                                                                                                    |                 |                    |                                                                                                                                             |       |                    |
| 18/4/2024                                                                                                                                                           |                 |                    |                                                                                                                                             |       |                    |
| 5-Available forms of attendance                                                                                                                                     |                 |                    |                                                                                                                                             |       |                    |
| Classrooms with labs                                                                                                                                                |                 |                    |                                                                                                                                             |       |                    |
| 6. Number of credit hours (total) / number of units (total)                                                                                                         |                 |                    |                                                                                                                                             |       |                    |
| The number of hours (60)/ Number of units (4)                                                                                                                       |                 |                    |                                                                                                                                             |       |                    |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                        |                 |                    |                                                                                                                                             |       |                    |
| Eng. Mustafa Aziz Khalaf                                                                                                                                            |                 |                    |                                                                                                                                             |       |                    |
| 8. Course Objectives                                                                                                                                                |                 |                    |                                                                                                                                             |       |                    |
| Using design and programming tools: Students learn to use coding languages such as HTML, CSS, and JavaScript to build and develop the visual interface of the site. |                 |                    |                                                                                                                                             |       |                    |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                    |                 |                    |                                                                                                                                             |       |                    |
| <ul style="list-style-type: none"> <li>Understanding the basics</li> <li>Analysis of users and their needs</li> <li>Design attractive user interfaces</li> </ul>    |                 |                    |                                                                                                                                             |       | OF THE<br>STRATEGY |
| 10. Course Structure                                                                                                                                                |                 |                    |                                                                                                                                             |       |                    |
| Valuation Method                                                                                                                                                    | Learning Method | Unit or Topic Name | Intended Learning Outcomes                                                                                                                  | Hours | Week               |
| QUESTIONS AND DISCUSSION                                                                                                                                            | Lectures /Lab   | Web Design         | web based Application, Introduction, The world wide web, The internet and web, The history and growth of the web, internet service provider | 4     | First Week         |
| QUESTIONS AND DISCUSSION                                                                                                                                            | Lectures /Lab   | Web Design         | http the purpose of the web, web application, the web concepts, Hypertext, web page, web site, web page address, web browsing               | 4     | The second week    |
| QUESTIONS AND DISCUSSION                                                                                                                                            | Lectures /Lab   | Web Design         | The classifying the Web Sites, environment, the general                                                                                     | 4     | Week 3             |

|                                                                                                |               |            |                                              |   |                 |
|------------------------------------------------------------------------------------------------|---------------|------------|----------------------------------------------|---|-----------------|
|                                                                                                |               |            | approach, range of complexity, Client side,  |   |                 |
| QUESTIONS AND DISCUSSION                                                                       | Lectures /Lab | Web Design | HTML<br>HTML (image, link, image map)        | 4 | The fourth week |
| QUESTIONS AND DISCUSSION                                                                       | Lectures /Lab | Web Design | HTML (Table)                                 | 4 | WEEK 5          |
| QUESTIONS AND DISCUSSION                                                                       | Lectures /Lab | Web Design | HTML (Frame)                                 | 4 | Week 6          |
| QUESTIONS AND DISCUSSION                                                                       | Lectures /Lab | Web Design | HTML (Form)                                  | 4 | WEEK 7          |
| 4 First Month Examination                                                                      |               |            |                                              |   | WEEK 8          |
| QUESTIONS AND DISCUSSION                                                                       | Lectures /Lab | Web Design | CSS, External                                | 4 | Week 9          |
| QUESTIONS AND DISCUSSION                                                                       | Lectures /Lab | Web Design | CSS, Internal                                | 4 | Week 10         |
| QUESTIONS AND DISCUSSION                                                                       | Lectures /Lab | Web Design | Scripting language<br>JavaScript             | 4 | Week 11         |
| QUESTIONS AND DISCUSSION                                                                       | Lectures /Lab | Web Design | JavaScript Arithmetic<br>Logical Operators   | 4 | Week 12         |
| QUESTIONS AND DISCUSSION                                                                       | Lectures /Lab | Web Design | JavaScript Conditional<br>Statements         | 4 | Week 13         |
| QUESTIONS AND DISCUSSION                                                                       | Lectures /Lab | Web Design | JavaScript Conditional<br>Statements&EXAMPLE | 4 | Week 14         |
| 4 Second Month Examination                                                                     |               |            |                                              |   | Week 15         |
| <b>Course Evaluation</b>                                                                       |               |            |                                              |   |                 |
| <ul style="list-style-type: none"> <li>▪ Quiz and participate in daily preparation.</li> </ul> |               |            |                                              |   |                 |
| <b>12. Teaching and Learning Resources</b>                                                     |               |            |                                              |   |                 |
| Static Web programming/<br>Dr. Shatha Habeeb<br>Dr. Athraa Jasim Mohammed                      |               |            |                                              |   |                 |

## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                         |                                      |                            |       |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------|----------------------------|-------|-----------------|
| 1- Course Name                                                                                                                                                                                                                                                                                                                                                                                                                                        |                         |                                      |                            |       |                 |
| English Language                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                                      |                            |       |                 |
| 2-CourseCode                                                                                                                                                                                                                                                                                                                                                                                                                                          |                         |                                      |                            |       |                 |
| UWEN302                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |                                      |                            |       |                 |
| 3-semester/ year                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                                      |                            |       |                 |
| Semester II 2023-2024                                                                                                                                                                                                                                                                                                                                                                                                                                 |                         |                                      |                            |       |                 |
| 4-The history of preparation of this description                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                                      |                            |       |                 |
| 18/4/2024                                                                                                                                                                                                                                                                                                                                                                                                                                             |                         |                                      |                            |       |                 |
| 5-Available forms of attendance                                                                                                                                                                                                                                                                                                                                                                                                                       |                         |                                      |                            |       |                 |
| Classes*                                                                                                                                                                                                                                                                                                                                                                                                                                              |                         |                                      |                            |       |                 |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                                                                                                           |                         |                                      |                            |       |                 |
| The number of hours (30)/ Number of units (2)                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                                      |                            |       |                 |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                                                                          |                         |                                      |                            |       |                 |
| Eng. Sarah Hazem Mohamed                                                                                                                                                                                                                                                                                                                                                                                                                              |                         |                                      |                            |       |                 |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                  |                         |                                      |                            |       |                 |
| .Knowing the grammatical rules commonly used in the language .1<br>.Developing the student's abilities to acquire skills in language learning .2<br>. English Introducing the student to terms and texts related to computer science and programming in .3<br>.The student is familiar with the basics of the English language and the phrases used on a daily basis .4<br>.English on various topics Developing dialogue and discussion skills in .5 |                         |                                      |                            |       |                 |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                                      |                            |       |                 |
| The strategy of teaching general and computer-specific terms, their knowledge and how to use them.<br>Teaching students to read through absorptive pieces within their field of specialization.<br>Ask questions in English to see how well students are able to speak the language.                                                                                                                                                                  |                         |                                      |                            |       | OF THE STRATEGY |
| 10. Course Structure                                                                                                                                                                                                                                                                                                                                                                                                                                  |                         |                                      |                            |       |                 |
| Valuation Method                                                                                                                                                                                                                                                                                                                                                                                                                                      | Learning Method         | Unit or Topic Name                   | Intended Learning Outcomes | Hours | Week            |
| Oral examination                                                                                                                                                                                                                                                                                                                                                                                                                                      | Discussion and dialogue | Introduction to language acquisition | Cognitive and Skills       | 2     | First Week      |
| Oral examination                                                                                                                                                                                                                                                                                                                                                                                                                                      | Discussion and          | A World of Differences               | Cognitive and Skills       | 2     | The second week |

|                                                                  |                               |                               |                      |        |                 |
|------------------------------------------------------------------|-------------------------------|-------------------------------|----------------------|--------|-----------------|
|                                                                  | dialogue                      |                               |                      |        |                 |
| Oral examination                                                 | Discussion and dialogue       | The Working Week              | Cognitive and Skills | 2      | Week 3          |
| Oral examination                                                 | Discussion and dialogue       | Reading passages              | Cognitive and Skills | 2      | The fourth week |
| Q&A                                                              | -                             |                               | Cognitive and Skills | 2      | WEEK 5          |
| Daily Exam                                                       | Q&A                           | Our Changing World            | Cognitive and Skills | 2      | Week 6          |
| Oral examination                                                 | Discussion and dialogue       | Passion                       | Cognitive and Skills | 2      | WEEK 7          |
| Q&A                                                              | Terminology of IT programming | Cognitive and Skills          | 2                    | WEEK 8 | Q&A             |
| Oral examination                                                 | Q&A                           | All Things High Tech          |                      | 2      | Week 9          |
| Oral examination                                                 | Discussion and dialogue       | Reading Passage               |                      | 2      | Week 10         |
| Daily Exam                                                       | Q&A                           | Terminology of IT programming | Cognitive and Skills | 2      | Week 11         |
| Oral examination                                                 | Discussion and dialogue       | Academic Writing              | Cognitive and Skills | 2      | Week 12         |
| Q&A                                                              | -                             |                               | Cognitive and Skills |        | Week 13         |
| QUESTIONS AND DISCUSSION                                         |                               | Revision                      | Cognitive and Skills | 2      | Week 14         |
| Q&A                                                              |                               | Revision                      | Cognitive and Skills | 2      | Week 15         |
| Course Evaluation                                                |                               |                               |                      |        |                 |
| Oral Exam 10 Daily Exam 10 Monthly Exams 20 <b>Final Exam 60</b> |                               |                               |                      |        |                 |
| 12. Teaching and Learning Resources                              |                               |                               |                      |        |                 |

1. New Headway Intermediate.
2. English for Specific Purposes
3. [http\\ readingcomprehension\\ onlinetests.org](http://readingcomprehension.onlinetests.org)

### Course Description Form

|                                                                                                                                                                                                                                  |                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| 1- Course Name                                                                                                                                                                                                                   |                    |
| Computer organization                                                                                                                                                                                                            |                    |
| 2-CourseCode                                                                                                                                                                                                                     |                    |
| CSIT105                                                                                                                                                                                                                          |                    |
| 3-semester/ year                                                                                                                                                                                                                 |                    |
| Semester II 2023-2024                                                                                                                                                                                                            |                    |
| 4-The history of preparation of this description                                                                                                                                                                                 |                    |
| 2024-2-1                                                                                                                                                                                                                         |                    |
| 5-Available forms of attendance                                                                                                                                                                                                  |                    |
| Classrooms with labs                                                                                                                                                                                                             |                    |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                      |                    |
| The number of hours (60)/ Number of units (4)                                                                                                                                                                                    |                    |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                     |                    |
| Mr. Ahmed Hafez Abahim                                                                                                                                                                                                           |                    |
| 8. Course Objectives                                                                                                                                                                                                             |                    |
| 1- Identify the basics of computers in terms of hardware and software components.<br>2- Identify operating systems, their types and programming languages.<br>3- Recognize and implement Microsoft applications in laboratories. |                    |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                 |                    |
| <ul style="list-style-type: none"> <li>Interactive learning</li> <li>Developed Lecture</li> <li>Practical applications in selections</li> </ul>                                                                                  | OF THE<br>STRATEGY |
| 10. Course Structure                                                                                                                                                                                                             |                    |

| Valuation Method                                                                                                    | Learning Method | Unit or Topic Name            | Intended Learning Outcomes                                                       | Hours | Week            |
|---------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|----------------------------------------------------------------------------------|-------|-----------------|
| Questions and Discussion                                                                                            | Lectures - Lab  | Computer support organization | Explanation of languages of software applications chrome OS, Linux               | 4     | First Week      |
| Questions and Discussion                                                                                            | Lectures - Labs | Computer support organization | Viruses and ways to prevent them                                                 | 4     | The second week |
| Questions and Discussion                                                                                            | Lectures - Labs | Computer support organization | Electronic hacking in computers                                                  | 4     | Week 3          |
| Questions and Discussion                                                                                            | Lectures - Labs | Computer support organization | Learn Excel                                                                      | 4     | The fourth week |
| Exam Month 1                                                                                                        |                 |                               |                                                                                  | 4     | WEEK 5          |
| Questions and Discussion                                                                                            | Lectures - Labs | Computer support organization | Learning to perform and process arithmetic numbers                               | 4     | Week 6          |
| Questions and Discussion                                                                                            | Lectures - Labs | Computer support organization | Component of Immobilizer                                                         | 4     | Week 7          |
| Questions and Discussion                                                                                            | Lectures - Labs | Computer support organization | Learn PowerPoint                                                                 | 4     | WEEK 8          |
| Questions and Discussion                                                                                            | Lectures - Labs | Computer support organization | Methods of slideshows in the program                                             | 4     | Week 9          |
| Exam Month 2                                                                                                        |                 |                               |                                                                                  | 4     | Week 10         |
| Questions and Discussion                                                                                            | Lectures - Labs | Computer support organization | Components of the main window and ways to add drawings and shapes in the program | 4     | Week 11         |
| Questions and Discussion                                                                                            | Lectures - Labs | Computer support organization | Means of saving in PowerPoint                                                    | 4     | Week 12         |
| Questions and Discussion                                                                                            | Lectures - Labs | Computer support organization | How to add articles and display them and the writing mechanism                   | 4     | Week 13         |
| Questions and Discussion                                                                                            | Lectures - Labs | Computer support organization | Networks and their types                                                         | 4     | Week 14         |
| Questions and Discussion                                                                                            | Lectures - Labs | Computer support organization | Comprehensive review of all Microsoft applications                               | 4     | Week 15         |
| Course Evaluation                                                                                                   |                 |                               |                                                                                  |       |                 |
| 1- Daily assignments and participations and answering some questions in the lecture.<br>2- Daily and monthly exams. |                 |                               |                                                                                  |       |                 |
| 12. Teaching and Learning Resources                                                                                 |                 |                               |                                                                                  |       |                 |
| 1- The basics of computer learning.<br>2- Computer Skills                                                           |                 |                               |                                                                                  |       |                 |



## Course Description Form

|                                                                                                                                                           |                 |                               |                            |       |                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|----------------------------|-------|--------------------|
| 1- Course Name                                                                                                                                            |                 |                               |                            |       |                    |
| Mobile Computing                                                                                                                                          |                 |                               |                            |       |                    |
| 2-CourseCode                                                                                                                                              |                 |                               |                            |       |                    |
| Courses 2023/2024                                                                                                                                         |                 |                               |                            |       |                    |
| 3-semester/ year                                                                                                                                          |                 |                               |                            |       |                    |
| courses 2024-Second semester 2023                                                                                                                         |                 |                               |                            |       |                    |
| 4-The history of preparation of this description                                                                                                          |                 |                               |                            |       |                    |
| 10/2/2024                                                                                                                                                 |                 |                               |                            |       |                    |
| 5-Available forms of attendance                                                                                                                           |                 |                               |                            |       |                    |
| Classrooms with labs                                                                                                                                      |                 |                               |                            |       |                    |
| 6. Number of credit hours (total) / number of units (total)                                                                                               |                 |                               |                            |       |                    |
| Number of hours (56) Number of units(4)                                                                                                                   |                 |                               |                            |       |                    |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                              |                 |                               |                            |       |                    |
| Name: Eng. Eng. Hassanein Ali Dhib <span style="float: right;"><a href="mailto:h.thweab@uowasit.edu.iq">h.thweab@uowasit.edu.iq</a> Email :</span>        |                 |                               |                            |       |                    |
| 8. Course Objectives                                                                                                                                      |                 |                               |                            |       |                    |
| <ul style="list-style-type: none"> <li>Teaching students the concepts of mobile computing</li> <li>Making mobile applications</li> </ul>                  |                 |                               |                            |       |                    |
| TEACHING AND LEARNING STRATEGIES                                                                                                                          |                 |                               |                            |       |                    |
| <ul style="list-style-type: none"> <li><b>The student learned mobile programming</b></li> <li><b>Student education for mobile applications</b></li> </ul> |                 |                               |                            |       | OF THE<br>STRATEGY |
| 10. Course Structure                                                                                                                                      |                 |                               |                            |       |                    |
| Valuation Method                                                                                                                                          | Learning Method | Unit or Topic Name            | Intended Learning Outcomes | Hours | Week               |
| Questions and Discussion                                                                                                                                  | Lectures/ Lab   | Mobile and Wireless Computing | Android Basics             | 4     | First Week         |
| Questions and Discussion                                                                                                                                  | Lectures/ Lab   | Mobile and Wireless Computing | Android Applications       | 4     | The second week    |
| Questions and Discussion                                                                                                                                  | Lectures/ Lab   | Mobile and Wireless Computing | Java Script                | 4     | Week 3             |
| Questions and Discussion                                                                                                                                  | Lectures/ Lab   | Mobile and Wireless           | Android - Architecture     | 4     | The fourth week    |

|                                                                                                                                                                                                                                                                                  |               |                               |                         |   |         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------|-------------------------|---|---------|
|                                                                                                                                                                                                                                                                                  |               | Computing                     |                         |   |         |
| Exam Month 1                                                                                                                                                                                                                                                                     |               |                               |                         | 2 | WEEK 5  |
| Questions and Discussion                                                                                                                                                                                                                                                         | Lectures/ Lab | Mobile and Wireless Computing | Android Runtime         | 4 | Week 6  |
| Questions and Discussion                                                                                                                                                                                                                                                         | Lectures/ Lab | Mobile and Wireless Computing | Layout Attributes       | 4 | WEEK 7  |
| Questions and Discussion                                                                                                                                                                                                                                                         | Lectures/ Lab | Mobile and Wireless Computing | Android – Activities    | 4 | WEEK 8  |
| Questions and Discussion                                                                                                                                                                                                                                                         | Lectures/ Lab | Mobile and Wireless Computing | Android – Services      | 4 | Week 9  |
| Exam Second month                                                                                                                                                                                                                                                                |               |                               |                         | 2 | Week 10 |
| Questions and Discussion                                                                                                                                                                                                                                                         | Lectures/ Lab | Mobile and Wireless Computing | Android-UI Layouts      | 4 | Week 11 |
| Questions and Discussion                                                                                                                                                                                                                                                         | Lectures/ Lab | Mobile and Wireless Computing | Android - Drag and Drop | 4 | Week 12 |
| Questions and Discussion                                                                                                                                                                                                                                                         | Lectures/ Lab | Mobile and Wireless Computing | Android - Sending Email | 4 | Week 13 |
| Questions and Discussion                                                                                                                                                                                                                                                         | Lectures/ Lab | Mobile and Wireless Computing | Android - Alert Dialog  | 4 | Week 14 |
| Questions and Discussion                                                                                                                                                                                                                                                         | Lectures/ Lab | Mobile and Wireless Computing | Review                  | 4 | Week 15 |
| Course Evaluation                                                                                                                                                                                                                                                                |               |                               |                         |   |         |
| <ul style="list-style-type: none"> <li>▪ <b>Homework and participation in daily preparation.</b></li> <li>▪ <b>Awarding the degree to students for some of the questions that are asked in the lecture and of a cognitive nature.</b></li> <li>▪ <b>Monthly exams</b></li> </ul> |               |                               |                         |   |         |
| 12. Teaching and Learning Resources                                                                                                                                                                                                                                              |               |                               |                         |   |         |
| Learn Android programming pdf , Android programming step by step , Android programming in Arabic , Android programming for beginners , Android programming basics, Android application programming software,                                                                     |               |                               |                         |   |         |

## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                |                 |                               |                                                                           |       |                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|---------------------------------------------------------------------------|-------|----------------------------|
| 1- Course Name                                                                                                                                                                                                                                                                                                                                 |                 |                               |                                                                           |       |                            |
| English Language - stage 1                                                                                                                                                                                                                                                                                                                     |                 |                               |                                                                           |       |                            |
| 2-CourseCode                                                                                                                                                                                                                                                                                                                                   |                 |                               |                                                                           |       |                            |
| UWEN102                                                                                                                                                                                                                                                                                                                                        |                 |                               |                                                                           |       |                            |
| 3-semester/ year                                                                                                                                                                                                                                                                                                                               |                 |                               |                                                                           |       |                            |
| Semester II 2023-2024                                                                                                                                                                                                                                                                                                                          |                 |                               |                                                                           |       |                            |
| 4-The history of preparation of this description                                                                                                                                                                                                                                                                                               |                 |                               |                                                                           |       |                            |
| April 18, 2024                                                                                                                                                                                                                                                                                                                                 |                 |                               |                                                                           |       |                            |
| 5-Available forms of attendance                                                                                                                                                                                                                                                                                                                |                 |                               |                                                                           |       |                            |
| Attendance                                                                                                                                                                                                                                                                                                                                     |                 |                               |                                                                           |       |                            |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                    |                 |                               |                                                                           |       |                            |
| The number of hours (30)/ Number of units (2)                                                                                                                                                                                                                                                                                                  |                 |                               |                                                                           |       |                            |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                   |                 |                               |                                                                           |       |                            |
| Haider Akab Alwan                                                                                                                                                                                                                                                                                                                              |                 |                               |                                                                           |       |                            |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                           |                 |                               |                                                                           |       |                            |
| <p>primarily on reading and writing essays and how to begin year students focuses-This course for first writing and analyze any paragraphs into the main idea and supporting details. Dozens of useful new vocabulary will be on the first page of each chapter, and finally a range of grammar rules will also be course covered in this.</p> |                 |                               |                                                                           |       |                            |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                                                                                                                                                                               |                 |                               |                                                                           |       |                            |
| <b>Developing the student's skills in the field of expressive reading and writing and how to formulate the question in English</b>                                                                                                                                                                                                             |                 |                               |                                                                           |       | <b>OF THE<br/>STRATEGY</b> |
| 10. Course Structure                                                                                                                                                                                                                                                                                                                           |                 |                               |                                                                           |       |                            |
| Valuation Method                                                                                                                                                                                                                                                                                                                               | Learning Method | Unit or Topic Name            | Intended Learning Outcomes                                                | Hours | Week                       |
| Editorial tests                                                                                                                                                                                                                                                                                                                                | Data Show       | Chapter One: Times in English | How to get to know people                                                 | 2     | First Week                 |
| ==                                                                                                                                                                                                                                                                                                                                             | ==              | Identification of the person  | Social expression                                                         | 2     | The second week            |
| ==                                                                                                                                                                                                                                                                                                                                             | ==              | Listening and Speaking        | Communication between humans and the way of communication between animals | 2     | Week 3                     |

|                                                                                                                                                                                                                                                   |    |                                               |                                       |   |                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------------------------------------------|---------------------------------------|---|--------------------|
| ==                                                                                                                                                                                                                                                | == | Chapter Two<br>The Way We<br>Live             | Acquisition Tools                     | 2 | The fourth<br>week |
| Month 1 exam                                                                                                                                                                                                                                      |    |                                               |                                       | 2 | WEEK 5             |
| ==                                                                                                                                                                                                                                                | == | THE DAILY<br>ROUTINE OF<br>THE                | Tie-in Tools                          | 2 | Week 6             |
| ==                                                                                                                                                                                                                                                | == | How the<br>dialogue<br>works                  | Listening and Speaking                | 2 | WEEK 8             |
| ==                                                                                                                                                                                                                                                | == | Chapter<br>Three<br>:Everything<br>Went Wrong | past                                  | 2 | Week 9             |
| Month 1 exam                                                                                                                                                                                                                                      |    |                                               |                                       | 2 | Week 10            |
| ==                                                                                                                                                                                                                                                | == | Past<br>Continuous                            | Express time                          | 2 | Week 11            |
| ==                                                                                                                                                                                                                                                | == | Vocabulary<br>and ways of<br>pronunciation    | Read a story by Sherlock Holmes       | 2 | Week 12            |
| ==                                                                                                                                                                                                                                                | == | Chapter Four                                  | The counted and the none are counted  | 2 | Week 13            |
| ==                                                                                                                                                                                                                                                | == | Listening and<br>new<br>vocabulary            | Skills for finding grammatical errors | 2 | Week 14            |
| ==                                                                                                                                                                                                                                                | == | Chapter Five :<br>What do you<br>want to do   | Verb Forms                            | 2 | Week 15            |
| Course Evaluation                                                                                                                                                                                                                                 |    |                                               |                                       |   |                    |
| The annual pursuit of the course is 50 degrees distributed in the form of two monthly exams 10 degrees for each exam deciding 10 degrees and the mid-year exam of 10 degrees and class participation 10 degrees . The final exam is of 50 marks . |    |                                               |                                       |   |                    |
| 12. Teaching and Learning Resources                                                                                                                                                                                                               |    |                                               |                                       |   |                    |
| Headway- Pre intermediate level<br>Skill for success – Reading and writing                                                                                                                                                                        |    |                                               |                                       |   |                    |

## Course Description Form

|                                                                                                                                                                                         |                 |                     |                                    |       |                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------|------------------------------------|-------|--------------------|
| 1- Course Name                                                                                                                                                                          |                 |                     |                                    |       |                    |
| Parallel Processors                                                                                                                                                                     |                 |                     |                                    |       |                    |
| 2-CourseCode                                                                                                                                                                            |                 |                     |                                    |       |                    |
|                                                                                                                                                                                         |                 |                     |                                    |       |                    |
| 3-semester/ year                                                                                                                                                                        |                 |                     |                                    |       |                    |
| courses 2024-Second semester 2023                                                                                                                                                       |                 |                     |                                    |       |                    |
| 4-The history of preparation of this description                                                                                                                                        |                 |                     |                                    |       |                    |
| 2024/2/10                                                                                                                                                                               |                 |                     |                                    |       |                    |
| 5-Available forms of attendance                                                                                                                                                         |                 |                     |                                    |       |                    |
| Classrooms                                                                                                                                                                              |                 |                     |                                    |       |                    |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                             |                 |                     |                                    |       |                    |
| Number of Hours (42) / Number of Units(3)                                                                                                                                               |                 |                     |                                    |       |                    |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                            |                 |                     |                                    |       |                    |
| Name: Eng. Eng. Hassanein Ali Dhib                                                                                                                                                      |                 |                     |                                    |       |                    |
| Email : h.thweab@uowasit.edu.iq                                                                                                                                                         |                 |                     |                                    |       |                    |
| 8. Course Objectives                                                                                                                                                                    |                 |                     |                                    |       |                    |
| Teaching students the concepts of mobile processing                                                                                                                                     |                 |                     |                                    |       |                    |
| Teaching students the most important algorithms for treatments                                                                                                                          |                 |                     |                                    |       |                    |
|                                                                                                                                                                                         |                 |                     |                                    |       |                    |
| TEACHING AND LEARNING STRATEGIES                                                                                                                                                        |                 |                     |                                    |       |                    |
| <ul style="list-style-type: none"> <li>✓ Student learns the basics of parallel processing</li> <li>✓ Teaching the student to make parallel treatments and speed up processes</li> </ul> |                 |                     |                                    |       | OF THE<br>STRATEGY |
| 10. Course Structure                                                                                                                                                                    |                 |                     |                                    |       |                    |
| Valuation Method                                                                                                                                                                        | Learning Method | Unit or Topic Name  | Intended Learning Outcomes         | Hours | Week               |
| Questions and Discussion                                                                                                                                                                | Lectures        | Parallel Processors | Understanding PARALLEL Environment | 3     | First Week         |
| Questions and Discussion                                                                                                                                                                | Lectures        | Parallel Processors | GPU design BELIEVES                | 3     | The second week    |
| Questions and Discussion                                                                                                                                                                | Lectures        | Parallel Processors | CUDA PLATFORM                      | 3     | Week 3             |

|                                                                                                                                                                                                                                                             |          |                     |                            |   |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------|----------------------------|---|-----------------|
| Questions and Discussion                                                                                                                                                                                                                                    | Lectures | Parallel Processors | Threads                    | 3 | The fourth week |
| Exam Month 1                                                                                                                                                                                                                                                |          |                     |                            | 3 | Week 5          |
| Questions and Discussion                                                                                                                                                                                                                                    | Lectures | Parallel Processors | Mapping                    | 3 | Week 6          |
| Questions and Discussion                                                                                                                                                                                                                                    | Lectures | Parallel Processors | Outlines                   | 3 | WEEK 8          |
| Questions and Discussion                                                                                                                                                                                                                                    | Lectures | Parallel Processors | Compact                    | 3 | Week 9          |
| Exam Second month                                                                                                                                                                                                                                           |          |                     |                            | 3 | Week 10         |
| Questions and Discussion                                                                                                                                                                                                                                    | Lectures | Parallel Processors | Segmented scan             | 3 | Week 11         |
| Questions and Discussion                                                                                                                                                                                                                                    | Lectures | Parallel Processors | Sorting                    | 3 | Week 12         |
| Questions and Discussion                                                                                                                                                                                                                                    | Lectures | Parallel Processors | Fundamental GPU algorithms | 3 | Week 13         |
| Questions and Discussion                                                                                                                                                                                                                                    | Lectures | Parallel Processors | Histogram                  | 3 | Week 14         |
| Questions and Discussion                                                                                                                                                                                                                                    | Lectures | Parallel Processors | LEVELS OF OPTIMIZATION     | 3 | Week 15         |
| Course Evaluation                                                                                                                                                                                                                                           |          |                     |                            |   |                 |
| <ul style="list-style-type: none"> <li>▪ Homework and participation in daily preparation.</li> <li>▪ Awarding the degree to students for some of the questions that are asked in the lecture and of a cognitive nature.</li> <li>▪ Monthly exams</li> </ul> |          |                     |                            |   |                 |
| 12. Teaching and Learning Resources                                                                                                                                                                                                                         |          |                     |                            |   |                 |

### Course Description Form

|                                                                                 |
|---------------------------------------------------------------------------------|
| 1- Course Name                                                                  |
| databases.                                                                      |
| 2-CourseCode                                                                    |
| CSI203                                                                          |
| 3-semester/ year                                                                |
| 2023 - 2024                                                                     |
| 4-The history of preparation of this description                                |
| 01/09/2023                                                                      |
| 5-Available forms of attendance                                                 |
| In-Person                                                                       |
| 6. Number of credit hours (total) / number of units (total)                     |
| Number of Hours(120) / Number of Units(4)                                       |
| 7. The name of the course administrator (if more than one name is mentioned)    |
| Prof. Dr. Ahmed Shaker Abdul Redha                                              |
| 8. Course Objectives                                                            |
| Learn about databases and how to create them                                    |
| TEACHING AND LEARNING STRATEGIES                                                |
| Cognitive objectives -A                                                         |
| Introducing the principles and basics of databases, their systems and types -A1 |

database concepts Applying -A2  
 Realizing the importance of database systems -A3  
 Identify the difference between traditional files and database systems -A4  
 Determine the difference between database systems and distributed database systems -A5  
 database systems The ability to describe -A6  
 The skills objectives of the course -B  
 Ability to give lectures related to database systems -B1  
 Ability to design a database system -B2  
 The ability to learn and practice various traditional and distributed database systems -B3  
 ability to manage dialogues and discussions related to database systems The -B4  
 Teaching and learning methods
 

- Using technology when giving lectures
- Writing computer programs for databases
- ed to database Providing the student with the main and auxiliary vocabulary relat systems
- Asking the student to design database systems

 Evaluation methods
 

- homework
- Daily surprise exams
- Monthly exams
- Monthly reports
- Quarterly exams

 Emotional and value goals -C  
 Pay attention to the lecture -C1  
 ation in the lectureParticip -C2  
 Accept the lecture -C3  
 The desire to continue the lecture -C4

#### 10. Course Structure

| Week  | Hours | Intended Learning Outcomes                                                                            | Module / Course Name or                            | teaching method | Valuation Method |
|-------|-------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------|------------------|
| 1 - 4 | 16    | Introduction to Traditional Systems                                                                   | <b>Introduction to Database Systems</b>            | Lectures        | Exams            |
| 5-8   | 16    | Understand and learn how to model data, how to access data, and what storage structures are available | <b>Data Models</b>                                 | Lectures        | Exams            |
| 9-15  | 28    | Understanding the relational models, how to design them, what are the network and                     | <b>entity Relational Model &amp; Normalization</b> | Lectures        | Exams            |



|                                                                                                                                                                                                                             |    |                                                                                |                                        |          |       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------|----------------------------------------|----------|-------|
|                                                                                                                                                                                                                             |    | hierarchical models, and knowing the differences between these multiple models |                                        |          |       |
| 16-17                                                                                                                                                                                                                       | 8  | Understanding Parallel Databases                                               | <b>Parallel Databases</b>              | Lectures | Exams |
| 18-19                                                                                                                                                                                                                       | 8  | Distributed Databases                                                          | <b>Distributed Databases</b>           | Lectures | Exams |
| 20 – 25                                                                                                                                                                                                                     | 24 | Understand how to save and extract data                                        | <b>Data Warehouses and Data Mining</b> | Lectures | Exams |
| 26 – 30                                                                                                                                                                                                                     | 20 | Understand how to create a project using databases                             | <b>Database Design Project</b>         | Lectures | Exams |
| <b>Course Evaluation</b>                                                                                                                                                                                                    |    |                                                                                |                                        |          |       |
| <ul style="list-style-type: none"> <li>Homework and participation in daily preparation.</li> <li>Giving the degree to students about some of the questions that are asked in the lecture.</li> <li>Monthly exams</li> </ul> |    |                                                                                |                                        |          |       |
| <b>12. Teaching and Learning Resources</b>                                                                                                                                                                                  |    |                                                                                |                                        |          |       |
| <ul style="list-style-type: none"> <li>Introduction to database Management system by Dr. Satinder Bal Gupta</li> <li>Fundamentals of Database Systems, 7th Edition. Ramez Elmasri,</li> </ul>                               |    |                                                                                |                                        |          |       |

## Course Description Form

| 1. Course Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------|
| Data Security                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| 2. Course Code:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| 3. Semester / Year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| quarterly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| 4. The history of preparation of this description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| 2023/5/10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| 5. Available attendance forms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| My presence only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| One hour per class . 4 An hour a week 0 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| <b>Name: Eng. Ghaith Ali Hussein Al-Awadi      Email : galawady@uowasit.edu.iq</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| 1- Introducing students to the importance of data security and working to master its rules and basics to reach the integrated scientific material.<br>2-Urging students to know the methodology of scientific research and to know how to create reports on data and its security .<br>3- Students' access to the vocabulary of the scientific material for data security .<br>4-Searching for scientific sources related to the material<br>5- Strengthening students' skills and building their academic personality<br>6-Work to consolidate the spirit of science and learning among students |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| 9. Course Structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| Week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | hours | Intended Learning Outcomes                                                  | Unit or Topic Name                                                                                                                                                                                    | Learning Method                                                             | Valuation Method           |
| The first                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 16    | 1- Knowledge of the basics of data security and computers and their types . | - What is meant by data security<br>- Introduction to Data Security<br>- Information security elements<br>- Operations related to information security<br>Threats and Hazards<br>- Accidents, attacks | Theoretical and scientific discussion and lecture, questioning and analysis | Various achieve ment tests |
| The second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| third                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |
| Fourth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |                                                                             |                                                                                                                                                                                                       |                                                                             |                            |

|                |    |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                        |                                                                                  |                                        |
|----------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------|
|                |    | 2- Know and understand the main steps to be taken to protect data from various breaches                                                                                         | and breaches                                                                                                                                                                                                                                                                                           |                                                                                  |                                        |
| 5th            | 20 | 3- Knowledge and knowledge of students in all programs and programming languages to be used in the establishment of specific software systems according to the customer's need. | SOFTWARE PIRACY and disguise<br>- Theft and misappropriation of information<br>- Means of information security<br>Introduction to Cryptography<br>- Main data protection purposes. and what types of encryption                                                                                        | conclusion and brainstorming .<br>Practical, electronic and theoretical lectures | Exams, tests and discussion            |
| Six            |    |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                        |                                                                                  |                                        |
| Seven          |    |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                        |                                                                                  |                                        |
| The eighth     |    |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                        |                                                                                  |                                        |
| Nine           |    |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                        |                                                                                  |                                        |
| Ten            | 24 | 4-Identifying and applying the concepts of information technology.                                                                                                              | - How to encrypt<br>- Decryption and types of encryption<br>- Characteristics of encryption and decryption the encryption.<br>- Use equations Mathematics in Cryptography and decryption encryption and decryption Messages using Private keys<br>- Encryption. - Encryption. Using different software | Reporting and research Administration and theoretical and practical lectures     | Exams, Tests, Discussions and Seminars |
| The eleven     |    |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                        |                                                                                  |                                        |
| Twelfth        |    |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                        |                                                                                  |                                        |
| The thirteenth |    |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                        |                                                                                  |                                        |
| Fourteenth     |    |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                        |                                                                                  |                                        |
| the fifteen    |    |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                        |                                                                                  |                                        |

|                                                                                                                                                                                                                                                                                                 |  |  |                                                                                                                                                                                                                                          |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
|                                                                                                                                                                                                                                                                                                 |  |  | algorithms                                                                                                                                                                                                                               |  |  |
| <b>10. Course Evaluation</b>                                                                                                                                                                                                                                                                    |  |  |                                                                                                                                                                                                                                          |  |  |
| Distribution as follows: 20 grades of the first and second monthly exams 10 grades of the first and second month practical exams and 10 grades daily and the duties of the total 40 grades of the semester . 40 theoretical exam scores and 20 practical exam scores for final exams total 60 . |  |  |                                                                                                                                                                                                                                          |  |  |
| <b>11. Learning and Teaching Resources</b>                                                                                                                                                                                                                                                      |  |  |                                                                                                                                                                                                                                          |  |  |
| Required textbooks ( methodology if any )                                                                                                                                                                                                                                                       |  |  | Data and information security : book                                                                                                                                                                                                     |  |  |
| Key References (Sources)                                                                                                                                                                                                                                                                        |  |  | 1. Information security and encryption techniques.<br>2. Data and information security.<br>3. Encryption algorithms .                                                                                                                    |  |  |
| Recommended supporting books and references (scientific journals, reports....)                                                                                                                                                                                                                  |  |  | - Cryptography or the history of writing ciphers, principles and basics.<br><br>-Digital encryption .                                                                                                                                    |  |  |
| E-References , Websites                                                                                                                                                                                                                                                                         |  |  | <a href="https://ae.linkedin.com/pulseAA-muneer-abdeljaber">https://ae.linkedin.com/pulseAA-muneer-abdeljaber</a> .<br><br><a href="https://www.iasj.net/iasj/pdf/51b569f8c8bd04b7">https://www.iasj.net/iasj/pdf/51b569f8c8bd04b7</a> . |  |  |

### Course Description Form

| 1. Course Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |                                                                   |                                                                            |                                                                    |                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------|
| Communications and computer networks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                   |                                                                            |                                                                    |                           |
| 2. Course Code:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |                                                                   |                                                                            |                                                                    |                           |
| SFTW305                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                   |                                                                            |                                                                    |                           |
| 3. Semester / Year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |                                                                   |                                                                            |                                                                    |                           |
| quarterly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |                                                                   |                                                                            |                                                                    |                           |
| 4. The history of preparation of this description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                   |                                                                            |                                                                    |                           |
| 10/2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                   |                                                                            |                                                                    |                           |
| 5. Available attendance forms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                   |                                                                            |                                                                    |                           |
| My presence only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                   |                                                                            |                                                                    |                           |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                                                   |                                                                            |                                                                    |                           |
| An hour a week 4 . hour per class One 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |                                                                   |                                                                            |                                                                    |                           |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                   |                                                                            |                                                                    |                           |
| <b>Name: Eng. Ghaith Ali Hussein Al-Awadi      Email : galawady@uowasit.edu.iq</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |                                                                   |                                                                            |                                                                    |                           |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                   |                                                                            |                                                                    |                           |
| <ul style="list-style-type: none"> <li>- Providing the student with the basic concepts of computer networks.</li> <li>- Study and understand the basic applications of computer networks</li> <li>- Studying methods of developing computer network systems</li> <li>- Studying the types of connecting systems used in computer networks.</li> <li>- Understanding and providing the student with the types of programming language used in computer networks.</li> <li>- Studying the types and methods of scheduling computer networks</li> </ul> |       |                                                                   |                                                                            |                                                                    |                           |
| 9. Teaching and learning strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |                                                                   |                                                                            |                                                                    |                           |
| 1- .collaborative concept planning ,Educational strategy<br>2- .Brainstorming education strategy<br>3- Education Strategy Notes Series                                                                                                                                                                                                                                                                                                                                                                                                               |       |                                                                   |                                                                            |                                                                    |                           |
| 10. Course Structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                   |                                                                            |                                                                    |                           |
| Week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | hours | Intended Learning Outcomes                                        | Unit or Topic Name                                                         | Learning Method                                                    | Valuation Method          |
| The first                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 16    | 4- Knowledge of the basics of computer networks and their types . | - Introductions to networks in general<br>- The four network protocol sums | Discussion,<br>theoretical lecture,<br>questioning and<br>analysis | <b>achievement tests.</b> |
| The second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                   |                                                                            |                                                                    |                           |
| third                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |                                                                   |                                                                            |                                                                    |                           |
| Fourth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |                                                                   |                                                                            |                                                                    |                           |

|                |    |                                                                                                                                                                                 |                                                                                                                                                                                 |                                                                                      |                                        |
|----------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------|
|                |    |                                                                                                                                                                                 |                                                                                                                                                                                 |                                                                                      |                                        |
| 5th            | 20 | 5- To know and understand the main steps to be taken for the operation of the different networks                                                                                | Last 2 Layers of Protocols<br>- Understand the process of pluralism and identify the first type of frequency division and the second type as well .<br>-Data Communication Form | conclusion and brainstorming .<br><br>Theoretical, practical and electronic lectures | Exams, quizzes and discussions         |
| Six            |    |                                                                                                                                                                                 |                                                                                                                                                                                 |                                                                                      |                                        |
| Seven          |    |                                                                                                                                                                                 |                                                                                                                                                                                 |                                                                                      |                                        |
| The eighth     |    |                                                                                                                                                                                 |                                                                                                                                                                                 |                                                                                      |                                        |
| Nine           | 24 | 6- Knowledge and knowledge of students in all programs and programming languages to be used in the establishment of specific software systems according to the customer's need. | Signals - Analogue an offer- the range to understand- Species the noise And method Measure it knowledge- road account capacity the channel                                      | Reporting and research<br>Administration<br>Theoretical and electronic lectures      | Exams, Tests, Discussions and Seminars |
| Ten            |    |                                                                                                                                                                                 |                                                                                                                                                                                 |                                                                                      |                                        |
| The eleventh   |    |                                                                                                                                                                                 |                                                                                                                                                                                 |                                                                                      |                                        |
| Twelfth        |    |                                                                                                                                                                                 |                                                                                                                                                                                 |                                                                                      |                                        |
| The thirteenth |    |                                                                                                                                                                                 |                                                                                                                                                                                 |                                                                                      |                                        |
| Fourteenth     |    |                                                                                                                                                                                 |                                                                                                                                                                                 |                                                                                      |                                        |
| the fifteenth  |    |                                                                                                                                                                                 |                                                                                                                                                                                 |                                                                                      |                                        |
|                |    | 4-Identifying and applying the concepts of information technology.                                                                                                              |                                                                                                                                                                                 |                                                                                      |                                        |

## 11. Course Evaluation

Distribution as follows: 20 grades of the first and second monthly exams 10 grades of the first and second month practical exams and 10 grades daily and the duties of the total 40 grades of the semester . 40 theoretical exam scores and 20 practical exam scores for final exams total 60 .

## 12. Learning and Teaching Resources

|                                                  |                                                                                                     |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Required textbooks ( methodology if any )</b> | <b>Network management confidentiality</b>                                                           |
| <b>Key References (Sources)</b>                  | <b>1“Comp TIA Network .</b><br><b>2.Security+Review gide</b><br><b>3-Computer networking basics</b> |

|                                                                                          |                                                                                                                                                                 |
|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Recommended supporting books and references</b><br>(scientific journals, reports....) | <a href="https://www.itu.int/dms_pub/itu-d/opb/stg/D-STG-SG02.03.1-2017-PDF-A.pdf">https://www.itu.int/dms_pub/itu-d/opb/stg/D-STG-SG02.03.1-2017-PDF-A.pdf</a> |
| <b>E-References , Websites</b>                                                           | <a href="https://www.slideshare.net/ssuser6c0042/network-security-80309525">https://www.slideshare.net/ssuser6c0042/network-security-80309525</a>               |

### Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Software Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2. Course Code:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| SFTW306                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. Semester / Year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| quarterly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 4. The history of preparation of this description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2023/5/10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 5. Available attendance forms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| My presence only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| An hour a week 3 . hour per class One 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Name: Eng. Ghaith Ali Hussein Al-Awadi      Email : galawady@uowasit.edu.iq</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <ul style="list-style-type: none"> <li>- Providing the student with the basic concepts of software engineering</li> <li>- Study and understand the basic applications of software engineering</li> <li>- Studying methods of developing software engineering systems</li> <li>- Studying the types of linking systems used in software engineering</li> <li>- Understanding and providing the student with the types of programming languages used software engineering</li> <li>- Studying the types and methods of scheduling for software engineering</li> <li>- Studying software projects and how to create and manage them</li> </ul> |
| 9. Teaching and learning strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

- 1- .Educational strategy, collaborative concept planning
- 2- .Brainstorming education strategy
- 3- Education Strategy Notes Series

#### 10. Course Structure

| Week           | hours | Intended Learning Outcomes                                                                                                                                                                                                                                | Unit or Topic Name                                                                                                                                                                                     | Learning Method                                                                 | Valuation Method                       |
|----------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------|
| The first      | 16    | 7- Knowledge of the basics of software projects and their types .                                                                                                                                                                                         | - Introductions to Software Engineering<br>- Software Lifecycle<br>- How to start a business                                                                                                           | Discussion, theoretical lecture, questioning and analysis                       | achievement tests.                     |
| The second     |       |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |                                                                                 |                                        |
| third          |       |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |                                                                                 |                                        |
| Fourth         |       |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |                                                                                 |                                        |
| 5th            | 20    | 8- Know and understand the main steps to be taken for the work of different projects                                                                                                                                                                      | - How to build software projects<br>- Analysis of the requirements of software systems and practical material in the analysis of material requirements, compositions and analysis of software objects. | conclusion and brainstorming .<br>Theoretical and electronic lectures           | Exams, quizzes and discussions         |
| Six            |       |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |                                                                                 |                                        |
| Seven          |       |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |                                                                                 |                                        |
| The eighth     |       |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |                                                                                 |                                        |
| Nine           | 24    | 9- Knowledge and knowledge of students in all programs and programming languages to be used in the establishment of specific software systems according to the customer's need.<br><br>4-Identifying and applying the concepts of information technology. | - Identifying the graphic models<br>- Analysis of technical materials for projects and designs<br>- Basic projects<br>- Procedural Designs<br>- Final engineering software project designs             | Reporting and research<br>Administration<br>Theoretical and electronic lectures | Exams, Tests, Discussions and Seminars |
| Ten            |       |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |                                                                                 |                                        |
| The eleventh   |       |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |                                                                                 |                                        |
| Twelfth        |       |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |                                                                                 |                                        |
| The thirteenth |       |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |                                                                                 |                                        |
| Fourteenth     |       |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |                                                                                 |                                        |
| the fifteenth  |       |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |                                                                                 |                                        |

#### 11. Course Evaluation

Distribution as follows: 20 grades of the first and second monthly theoretical examinations, 20 grades per day, and the duties of the total 40 grades for the semester . 60 Theoretical exam scores and final exams total 60 .

#### 12. Learning and Teaching Resources

Required textbooks ( methodology if any )

Software engineering



|                                                                                        |                                                                                                                                           |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Key References (Sources)</b>                                                        | 1“Software Engineering “Eighth Edition by Ian Sommerville.2006 .<br>2.Schuam's Outlines Software Engineering" by David A. Gustafson, 2002 |
| <b>Recommended supporting books and references (scientific journals, reports.....)</b> | Science and Technology                                                                                                                    |
| <b>E-References , Websites</b>                                                         | <a href="http://www.dfaj.net/index.php?r=journals/Journal&amp;i=155">www.dfaj.net/index.php?r=journals/Journal&amp;i=155</a>              |

### Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. 1- Course Name                                                                                                                                                                                                                                                                                                                                                                                          |
| 1 oriented programming-Object                                                                                                                                                                                                                                                                                                                                                                              |
| 2. Course Code:                                                                                                                                                                                                                                                                                                                                                                                            |
| CSIT201                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. Semester/year                                                                                                                                                                                                                                                                                                                                                                                           |
| 2024-Bologna / first semester 2023                                                                                                                                                                                                                                                                                                                                                                         |
| 4. The history of preparation of this description                                                                                                                                                                                                                                                                                                                                                          |
| 2023/10/1                                                                                                                                                                                                                                                                                                                                                                                                  |
| 5. Available attendance forms                                                                                                                                                                                                                                                                                                                                                                              |
| Classroom                                                                                                                                                                                                                                                                                                                                                                                                  |
| 6. Number of credit hours (total) / number of units (total)                                                                                                                                                                                                                                                                                                                                                |
| The number of hours (60)/ Number of units (4)                                                                                                                                                                                                                                                                                                                                                              |
| 7. The name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                               |
| <b>Eng. Elias Khudair Yalawi</b><br><b>Email Ilyas@uowsit.edu.iq</b>                                                                                                                                                                                                                                                                                                                                       |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                                                                                       |
| Designing and writing programs in the method of object programming, which depends on the object programming language c+ + features of object programming and the definition of orientation                                                                                                                                                                                                                 |
| 9. Teaching and learning strategies                                                                                                                                                                                                                                                                                                                                                                        |
| <ul style="list-style-type: none"> <li>● The first strategy is to show how to identify the problem in the outside world and transfer it to digital reality</li> <li>● Urging the student to participate daily and develop the self ability to engage in discussions and solutions daily examinations that address certain points, including knowledge of the level of understanding, linking th</li> </ul> |

elements of the material presented in daily lectures, as well as evaluating listening, follow-up, talking and reading of the approved sources of the material.

●The adoption of modern methods in the presentation of the material and put forward in a way that makes easier for the student to refer to the sequential titles in the introduction of the material is one of the most important strategies followed in the delivery of the material.

#### 10. Course Structure

| Week       | hours | Intended Learning Outcomes             | Unit or Topic Name | Learning Method                              | Valuation Method       |
|------------|-------|----------------------------------------|--------------------|----------------------------------------------|------------------------|
| The first  | 4     |                                        |                    | Theoretical lecture and practical laboratory | - Test                 |
| The second | 4     |                                        |                    | Theoretical lecture and practical laboratory | Laboratory Involvement |
| third      | 4     |                                        |                    | Theoretical lecture and practical laboratory | Laboratory Involvement |
| Fourth     | 4     |                                        |                    | Theoretical lecture and practical laboratory | Quick quiz             |
| 5th        | 4     | A first theoretical and practical test |                    |                                              |                        |
| Six        | 4     |                                        |                    | Theoretical lecture and practical laboratory | Laboratory Involvement |
| Seven      | 4     |                                        |                    | Theoretical lecture and practical laboratory | Laboratory Involvement |
| The eighth | 4     |                                        |                    | Theoretical lecture and practical laboratory | Sharing in the Dying   |
| Nine       | 4     |                                        |                    | Theoretical lecture and practical            | - Test                 |

|                                                                                                                                                                           |   |                                              |                                                                              |                                              |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------|------------------------|
|                                                                                                                                                                           |   |                                              |                                                                              | laboratory                                   |                        |
| Ten                                                                                                                                                                       | 4 | The second test is theoretical and practical |                                                                              |                                              |                        |
| The eleventh                                                                                                                                                              | 4 |                                              |                                                                              | Theoretical lecture and practical laboratory | Laboratory Involvement |
| Twelfth                                                                                                                                                                   | 4 |                                              |                                                                              | Theoretical lecture and practical laboratory | Laboratory Involvement |
| The thirteenth                                                                                                                                                            | 4 |                                              |                                                                              | Theoretical lecture and practical laboratory | - Test                 |
| Fourteenth                                                                                                                                                                | 4 |                                              |                                                                              | Theoretical lecture and practical laboratory | Presentation           |
| Fifteenth                                                                                                                                                                 | 4 | The third test is theoretical and practical  |                                                                              |                                              |                        |
| 11. Course Evaluation                                                                                                                                                     |   |                                              |                                                                              |                                              |                        |
| Distribution of the score of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly and written examinations and reports .... |   |                                              |                                                                              |                                              |                        |
| 12. Learning and Teaching Resources                                                                                                                                       |   |                                              |                                                                              |                                              |                        |
| Required textbooks ( methodology if any )                                                                                                                                 |   |                                              | None                                                                         |                                              |                        |
| Key References (Sources)                                                                                                                                                  |   |                                              | None                                                                         |                                              |                        |
| Recommended supporting books and references (scientific journals, reports....)                                                                                            |   |                                              | M.T.Somashekar D.S.GuruK.S.Manjunatha - Object Oriented programming with C++ |                                              |                        |
| E-References , Websites                                                                                                                                                   |   |                                              | None                                                                         |                                              |                        |