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.

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

Concepts and terminology:

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

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

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

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

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

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

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

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

Academic Program Description Form

University Name: University of Technology

Faculty/Institute: Computer Science Department

Scientific Department: Software Branch

Academic or Professional Program Name: Software

Final Certificate Name: B.Sc. in Computer Science / Software

Academic System: Courses

Description Preparation Date: 13/3/2024

File Completion Date: 13/3/2024

Signature:

Head of Department Name:

Athraa Jasim Mohammed

Date: 1/4/2024

Signature:

Scientific Associate Name:

Abeer Tariq Maolood

Date: 2/4/2024

The file is checked by: Nada Najeel Kamal

Quality Assurance and Performance Evaluation Division

Director of the Quality Assurance and Performance Evaluation Division

Date: 1/4/2024

Signature:

Approval of the Dean

Prof. Dr. Alaa Kadhim Farhan

2024/4/4

1. Program Vision

The department aspires to prepare and qualify competencies in the field of software construction and analysis, making it a leading model to be emulated in the field of computer software.

2. Program Mission

The mission of the Software Branch is to prepare distinguished cadres to meet the requirements of the labor market and are able to interact with other scientific fields by providing the student with basic skills in using, designing and analyzing various computer software.

3. Program Objectives

1-Preparing graduates capable of understanding, designing and developing computer software.

2. The student's understanding of the problems to be solved and finding the desired goal of solving these problems through data collection and analysis.

3. Developing highly qualified cadres of researchers and teachers in this branch.

4. Introducing the student to methodological methods in analyzing and designing applications for computers and mobile devices

4. Program Accreditation

Does the program have program accreditation? And from which agency?

none

5. Other external influences

Is there a sponsor for the program?

none

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	6	Depending on the course between 3 and 1	14%	Basic
College Requirements	15	Depending on the course between 2 and 3	33%	Basic
Department Requirements	21	Depending on the course between 2 and 3	50%	Basic
Summer Training	yes	-	-	-
Other	1	3	3%	Basic

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

7. Program Description

Second Year – First Semester

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
Second Year/ 2023-2024	CSCL2112	Object Oriented Programming 1	2	2
	CSCL2114	Data Structures	2	2
	CSCL2116	Mathematics 3	2	2
	CSCL2118	Database Foundation	2	2
	CSSP2104	Software Engineering 2	2	2
	CSCL2123	Baath Party Crimes	2	–

Second Year – Second Semester

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
	CSCL2213	**Object oriented programming2**	**2**	**2**
	CSCL2215	**Sorting and Searching Algorithms**	2	2
	CSCL2217	**Numerical Analysis**	**2**	**2**
	CSCL2219	**DataBase Design**	2	2
	CSCL2224	**Democracy and Human Rights**	2	-
	CSSP2205	**Analysis and Design of Algorithms**	2	2
	CSSP2206	**Computational Complexity**	2	-
	CSCL2222	**English Language 2**	2	-
Third Year – First Semester				
Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
	CSCL3123	**Microprocessor**	**2**	**2**
	CSCL3125	**Computation Theory**	**2**	–
	CSCL3133	**English Language 3**	**2**	
	CSCP3107	**Machine Learning**	**2**	**2**
	CSSP3108	**Computer Graphics and Visualization 1**	**2**	**2**
	CSSP3110	**Parallel Programming Paradigms**	**2**	**2**
	CSSP3111	**Software Modelling and analysis**	**2**	**2**
	CSSP3112	**Information Retrieval Techniques**	**2**	
Third Year – Second Semester				

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
	CSCL3224	**computer Architecture**	**2**	**2**
	CSCL3226	**Compiler Design**	**2**	**2**
	CSSP3213	**Computer Network 1**	**2**	**2**
	CSSP3209	**Computer Graphics and Visualization 2**	**2**	**2**
	CSSP3214	**Data Mining and Data Warehousing**	**2**	–
	CSSP3215	**SoftWare Design**	**2**	–
	CSSP3216	**Mobile Application Design**	**2**	**2**
Fourth Year – First Semester				
Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
	CSCL4134	**Static Web Programming**	**2**	**2**
	CSCL4136	**Operating System 1**	**2**	**2**
	CSCL3131	**Image Processing 1**	**2**	**2**
	CSCL4138	**Data Security 1**	**2**	**2**
	CSSP4119	**Windows Programming 1**	**2**	**2**
	CSSP4121	**Human Computer Interaction**	**2**	–
	CSCL444	**Project**	**2**	**2**
Fourth Year – Second Semester				
Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
	CSCL4235	**Dynamic Web Programming**	**2**	**2**
	CSCL4237	**Operating System 2**	**2**	**2**
	CSCL3232	**Image Processing 2**	**2**	**2**
	CSSP4218	**Secure Software Engineering**	**2**	–
	CSSP4220	**Windows Programming 2**	**2**	**2**
	CSSP4222	**Intelligent Search Methods**	**2**	**2**
	CSCL4242	**English Language 4**	**2**	–
	CSCL444	**Project**	**2**	**2**

8. Expected learning outcomes of the program	
Knowledge	
A	1-Knowledge of the events and methods associated with building software according to modern programming methods. 2- Knowledge of the software algorithms adopted in building systems according to modern technologies and methods 3- The student explains the concepts of techniques adopted in developing and building software 4- The student remembers, describes, and enumerates these concepts after graduation
Skills	
B	1-Building systems, using programs, designing systems, solving problems, and communicating in computer science 2- Using new technologies to address problems 3- Management of computer laboratories
Ethics	
C	1-Giving the student ways to analyze the problem and solve it 2- Adding mental skills to him 3- Expanding his mental, predictive, and creative oral thinking

9. Teaching and Learning Strategies
A- Knowledge and understanding. B- Subject-specific skills and logical thinking. C- Thinking skills and the ability to solve problems and think collectively. D- General and transferable skills (other skills relevant to employment and personal development).

10. Evaluation methods
Daily and weekly exams, the mid-term exam, the end-of-year exam, and preparing technical reports. For practical and theoretical evaluation.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
prof	Computer Science	Artificial intelligent			2	
Assist prof	Computer Science	Artificial intelligent			2	
Lecture	Computer Science	Multimedia			4	
Lecture	Computer Science	Information systems			1	
Lecture	Computer Science	Data security			1	
Assist Lecture	Computer Science	Data security			3	
Lecture	Computer Science	Software			2	

Professional Development

Mentoring new faculty members

Attending in-person and electronic seminars and workshops

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. **Acceptance Criterion**
central

13. **The most important sources of information about the program**
- Labor market needs. -Keeping pace with global development in this field. - You can learn about the program through the following link: https://cs.uotechnology.edu.iq/index.php/branches/sw

14. Program Development Plan
- There is an ongoing improvement plan for the branch and department, through updating the scientific curricula, using new concepts in the field of computer science, and using modern devices to implement these concepts.

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Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
Second	CSCL2112	Object Oriented Programming 1	Basic	√	√	√	√	√	√	√		√	√	√	
	CSCL2114	Data Structures	Basic	√	√	√	√	√	√	√		√	√	√	
	CSCL2116	Mathematics3	Basic	√	√	√	√	√	√	√		√	√	√	
	CSCL2118	Database Foundation	Basic	√	√	√	√	√	√	√		√	√	√	
	CSSP2104	Software Engineering 2	Basic	√	√	√	√	√	√	√		√	√	√	
	CSCL2123	Baath Party Crimes	Basic	√	√	√	√	√	√	√		√	√	√	
	CSCL2213	Object oriented programming2	Basic	√	√	√	√	√	√	√		√	√	√	
	CSCL2215	Sorting and Searching	Basic	√	√	√	√	√	√	√		√	√	√	

		Algorithms													
	CSCL2217	**Numerical Analysis**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL2219	**Databases Design**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL2224	**Democracy and Human Rights**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP2205	**Analysis and Design of Algorithms**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP2206	**Computational Complexity**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL2222	**English Language 2**	**Basic**	√	√	√	√	√	√	√		√	√	√	
Third	**CSCL3123**	**Microprocessor**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL3125	**Computation Theory**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL3133	**English Language 3**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCP3107	**Machine Learning**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP3108	**Computer Graphics and Visualization 1**	**Basic**	√	√	√	√	√	√	√		√	√	√	

	CSSP3110	**Parallel Programming Paradigms**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP3111	**Software Modelling and analysis**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP3112	**Information Retrieval Techniques**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL3224	**Computer Architecture**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL3226	**Compiler Design**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP3213	**Computer Network 1**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP3209	**Computer Graphics and Visualization 2**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP3214	**Data Mining and Data Warehousing**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP3215	**Software Design**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP3216	**Mobile Application Design**	**Basic**	√	√	√	√	√	√	√		√	√	√	
Fourth	**CSCL4134**	**Static Web Programing**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL4136	**Operating system1**	**Basic**	√	√	√	√	√	√	√		√	√	√	

	CSCL3131	**Image processing1**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL3131	**Data Security 1**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP4119	**Windows programming 1**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP4121	**Human Computer interaction**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL444	**Project**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL4235	**Dynamic Web Programing**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL4237	**Operating systems2**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL3232	**Image Processing 2**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP4218	**Secure Software Engineering**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP4220	**Windows programing2**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSSP4222	**Intelligent Search Methods**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL4242	**English Language 4**	**Basic**	√	√	√	√	√	√	√		√	√	√	
	CSCL444	**Project**	**Basic**	√	√	√	√	√	√	√		√	√	√	