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: Department of Computer Science

Scientific Department: Artificial Intelligence Branch

Academic or Professional Program Name: Computer Security and Cyber Security

Final Certificate Name: B.Sc. in Computer Science / Artificial Intelligence

Academic System: Unit System (First Stage) and Semester System (Second, Third, and fourth Stage)

Description Preparation Date: 14/3/2024

File Completion Date: 14/3/2024

Signature:

Head of Department Name:

Mustafa Jasim Hadi

Date: 2/4/2024

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 branch aspires to prepare and qualify competencies in artificial intelligence, making it a leading model to be emulated in smart applications.

2. Program Mission
The branch's mission is to prepare distinguished staff to meet the requirements of the labor market and acquire and understand the skills related to how to benefit from facts and evidence to correctly implement the system and provide appropriate solution results through understanding and developing knowledge bases and how to operate reasoning or deduction machines that lead to multiple solutions that contain a high percentage on optimal solutions.

3. Program Objectives
The branch aims to graduate students qualified to work in the field of artificial intelligence and able to compete, specializing in the field of smart applications and technologies. Understand and support the relationship of artificial intelligence with the needs of society. Developing the field of knowledge. Encouraging scientific research in the fields of theoretical and practical smart systems and applications. Introducing the student to methodological methods in analyzing and designing artificial intelligence applications.

4. Program Accreditation
Non

5. Other external influences
Non.
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

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
2023-2024/Second Stage First Semester	CSCL2112	Object-Oriented Programming I	2	2
	CSCL2114	Data Structures	2	2
	CSCL2116	Mathematics III	2	2
	CSCL2118	Database Foundation	2	2
	CSAI2104	NLP and Python Language	2	2
	CSCL2123	Crimes of Baath Regime in Iraq	2	–
2023-2024/Second Stage Second Semester	CSCL2213	Object-Oriented Programming II	2	2
	CSCL2215	Sorting and Searching Algorithms	2	2
	CSCL2217	Numerical Analysis	2	2
	CSCL2219	Database Design	2	2
	CSAI2205	Fuzzy Logic	2	–
	CSAI2206	Searching Strategies	2	2

	CSCL2224	Democracy and Human Rights	2	–
	CSCL2222	English Language II	2	–
2023-2024/Third Stage First Semester	CSCL3123	Microprocessor	2	2
	CSCL3125	Computation Theory	–	2
	CSCL3127	Operations Research	–	2
	CSAI3107	Computer Graphics 2D	2	2
	CSAI3108	Natural Language Processing	2	2
	CSAI3109	Algorithms and their Complexity	2	2
2023-2024/Third Stage Second Semester	CSAI3112	Heuristic Search Methods	2	2
	CSCL3133	English Language 3	–	2
	CSCL3224	Computer Architecture	2	2
	CSCL3226	Compiler Design	2	2
	CSCL3228	Optimization	–	2
	CSAI3211	Visualization	2	2
	CSAI3110	Expert System	2	2
	CSAI3213	Speech Recognition	2	2
	CSAI3214	Machine Learning	2	2
2023-2024/Fourth Stage First Semester	CSCL4134	Static Web Programming	2	2
	CSCL4136	Operating Systems 1	2	2
	CSCL4138	Data Security 1	2	2
	CSAI4115	Computer Networks	2	2
	CSAI4116	Planning & Robotics	2	2
	CSAI4117	Data warehouse	–	2
2023-2024/Fourth Stage Second Semester	CSCL4235	Dynamic Web Programming	2	2
	CSCL4237	Operating System 2	2	2
	CSCL4239	Data Security 2	2	2
	CSAI4218	Machine Vision	2	2
	CSAI4221	Advanced Intelligent Search	2	2
	CSAI4220	Data Mining	–	2

	CSCL4242	English Language 4	–	2
	CSCL444	Project	4	4

8. Expected learning outcomes of the program

Knowledge	
a. Cognitive goals	1. The prepared academic program aims to gain and understand skills on how to benefit from facts and evidence 2. To correctly implement the system and provide appropriate results and solutions through understanding and developing knowledge bases 3. How to operate reasoning or deduction machines that lead to multiple solutions that contain a high percentage of optimal solutions
Skills	
b. Skills objectives of the program	1. Search using intelligent algorithms 2. Use methods of representing knowledge appropriate to the problem being solved 3. Use an appropriate control strategy to implement the system
Ethics	
c. Evaluation methods	1. Commitment to ethics 2. Working as a team 3. Benefiting the concepts used from artificial intelligence to serve society

9. Teaching and Learning Strategies

1. Theoretical lectures
2. Practical (laboratory) lectures
3. Specialized workshops

10. Evaluation methods

1. Design and build laboratory systems including homework
2. Evaluation exams at all levels and at different times

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Lec. Dr. Mustafa Jassim Hadi		Special			Staff	
Prof. Dr. Ahmed Tariq Sadiq		Special			Staff	
Prof. Dr. Hanaa Mohsen Ahmed		Special			Staff	
Assist. Prof. Dr. Hassanein Samir Abdullah		Special			Staff	
Dr. Hiba Basim Alwan		Special			Staff	
Dr. Mustafa Tariq Abd		Special			Staff	
Assist Prof. Sura Mahmoud Abdullah		Special			Staff	
Lec. Dina Kazem Mohsen		Special			Staff	
Assist. Lect. Muhammad Thamer AbdulHadi		Special			Staff	
Lect. Alaa AbdulHussein Hashem		Multimedia			Staff	
Lect. Nour Haider AbdulAmir		Multimedia			Staff	
Assist. Lect. Ahmed Hamed Ahmed		Networks			Staff	
Assist. Lect. Saif Bashar Noua'ama		Information Systems			Staff	
Assist. Lect. Mai Sabry Muhammad		Data Security			Staff	
Lect. Amal AbdulJabbar Hassouni		Law			Staff	

Professional Development

Mentoring new faculty members

1. **Introducing resources**: Provide them with knowledge about the resources available for professional development at the university, such as training programs, workshops, conferences, and research opportunities.
2. **Setting goals**: Help them define their personal professional and academic goals, and determine the steps necessary to achieve them.
3. **Providing academic guidance**: Provide them with advice and guidance on how to improve teaching skills, and how to organize research and scientific publishing.
4. **Encouraging innovation and renewal**: Urging them to apply new teaching methods and innovative educational experiences, and encouraging them to continue developing and improving their educational methods.

Professional development of faculty members

- Training courses – workshops – research and projects – specialized seminars – conferences – postgraduate studies
- View the most important Arabic and foreign sources
- Study case studies and generalize the results
- Solve self-test questions in sources and references
- Simulate the complex systems

12. Acceptance Criterion

Central admission

13. The most important sources of information about the program

1. Labor market needs
2. Keeping pace with scientific development in this field
3. https://cs.uotechnology.edu.iq/index.php/branches/ai

14. Program Development Plan

Setting goals: Based on the previous analysis, specific and measurable goals are set related to improving the academic program, such as raising success rates, improving student satisfaction, developing teaching skills, and others.

Curricula development: Study curricula are updated and developed to be compatible with the latest academic trends and labour market needs, and to ensure their compatibility with the program objectives and expected learning outcomes.

Student support: This includes providing academic support services and academic advising, organizing guidance and counselling programs, and providing opportunities to participate in student activities and research.

Evaluation and monitoring: Performance indicators and evaluation criteria are determined to measure the progress of plan implementation, and the collected data is used to continuously improve the educational process.

Program Skills Outline												
				Required program Learning outcomes								
Year/Level	Course Code	Course Name	Basic or optional	Knowledge			Skills			Ethics		
				A1	A2	A3	B1	B2	B3	C1	C2	C3
Second Stage First Semester	CSCL2112	Object-Oriented Programming I	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL2114	Data Structures	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL2116	Mathematics III	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL2118	Database Foundation	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI2104	NLP and Python Language	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL2123	Crimes of Baath Regime in Iraq	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓

Second Stage Second Semester	CSCL2213	Object-Oriented Programming II	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL2215	Sorting and Searching Algorithms	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL2217	Numerical Analysis	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL2219	Database Design	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI2205	Fuzzy Logic	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI2206	Searching Strategies	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL2224	Democracy and Human Rights	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL2222	English Language II	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓

Third Stage First Semester	CSCL3123	Microprocessor	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL3125	Computation Theory	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL3127	Operations Research	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI3107	Computer Graphics 2D	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI3108	Natural Language Processing	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI3109	Algorithms and their Complexity	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI3112	Heuristic Search Methods	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL3133	English Language 3	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓

Third Stage Second Semester	CSCL3224	Computer Architecture	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL3226	Compiler Design	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL3228	Optimization	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI3211	Visualization	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI3110	Expert System	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI3213	Speech Recognition	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI3214	Machine Learning	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fourth Stage First Semester	CSCL4134	Static Web Programming	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL4136	Operating Systems 1	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL4138	Data Security 1	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI4115	Computer Networks	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI4116	Planning & Robotics	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI4117	Data warehouse	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓

Fourth Stage Second Semester	CSCL4235	Dynamic Web Programming	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL4237	Operating System 2	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL4239	Data Security 2	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI4218	Machine Vision	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI4221	Advanced Intelligent Search	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSAI4220	Data Mining	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL4242	English Language 4	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CSCL444	Project	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓

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