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

2021-2022

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 3/3002 on 21/4/2022 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: ……**Mosul**…….
Faculty/Institute: . **College of Computer Science and Mathematics**.
Scientific Department: … **Department of Statistics and Informatics**….
Academic or Professional Program Name: .. **Statistics and Informatics**…
Final Certificate Name: ….. **Science in statistics**….
Academic System: … **Quarterly system** …
Description Preparation Date: / /**2022**
File Completion Date: / **2022**

Signature:
Head of Department Name:
Assi. Prof. Dr. Muthanna Subhi Sulaiman
Date: / /**2022**

Signature:
Scientific Associate Name:
Prof. Dr. Safwan Omar Hasoon
Date: / /**2022**

The file is checked by:
Department of Quality Assurance and Performance Assessment
Director of the Quality Assurance and Performance Assessment:
Date:
Signature:

Approval of the Dean

1. **Program Vision**

The goal of the department is to maintain the distinguished scientific reputation derived from the quality of its alumni in terms of knowledge, skills, and abilities to perform robust statistical analyses and decision making.

2. Program Mission

The Department of Statistics and Informatics should be a leading center in education and scientific research.

3. Program Objectives

1. Continuous aspiration towards excellence in education, scientific research, and professional service in various sciences.
2. Prepare students for the labor market and develop their communication abilities to positively interact with others through active participation in the training program.
3. Acquire skills to demonstrate ideas and encourage team work through graduation projects.
4. Prepare students for graduate studies in the field of Statistics, Informatics, and Operations Research.
5. Preparing specialized scientific leaders through graduate programs.
6. Interaction with other sciences, especially mathematics and computer.

4. Program Accreditation

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

Accreditation Board for Engineering and Technology (ABET)

5. Other external influences

Central examinations

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	9	2	22.4%	
College Requirements	11	3	16.6%	
Department Requirements	34	3	63%	
Summer Training	40	2	100%	
Other				

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

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
First year/ Chapter I	CMSI22-F1121	Elementary Statistics(1)	3	-
	CMSI22-F1131	Informatics(1)	3	-
		Basics Programming	2	2
	CMSI22-F1211	Calculus(1)	2	-
	CMSI22-F1141	Finite Mathematics	2	2
		Arabic Language	2	-
	CMSI22-F1161	Human rights	2	-
First year/ Chapter II	CMSI22-F1221	Prices Index	2	-
	CMSI22-F1231	Informatics(2)	1	2
	CMSI22-F1241	Elementary Statistics(2)	3	-
	CMSI22-F1211	Calculus(2)	2	-
	CMSI22-F1251	MATLAB programming	2	-
	CMSI22-F2171	Democracy	2	-
Second Year/ Chapter I	CMSI22-F2111	Probability and random variables(1)	3	-
	CMSI22-F2121	Sampling Theory(1)	2	1
	CMSI22-F2161	Data structures(1)	2	2
	CMSI22-F2151	Linear Algebra	3	1
	CMSI22-F2141	Time Series Analysis	2	2
	CMSI22-F2131	Numerical Analysis(1)	2	2
	CMSI22-F2171	Teaching methods	2	0
Second Year/ Chapter II	CMSI22-F2211	Probability and random variables(2)	3	1
	CMSI22-F2221	Sampling Theory(2)	1	2
	CMSI22-F2241	Databases	2	2
	CMSI22-F2251	Differential Equations	3	-
	CMSI22-F2231	Numerical Analysis(2)	2	2
	CMSI22-F2271	Principles of Economics	2	-
	CMSI22-F2261	Research Methodology	2	-
	CMSI22-F2281	English Language	2	-

Third Year/ Chapter I	CMSI22-F3111	Mathematical Statistics(1)	3	-
	CMSI22-F3151	Operation Research(1)	3	-
	CMSI22-F3121	Regression Analysis(1)	3	-
	CMSI22-F3161	Information Systems Management	3	-
	CMSI22-F3171	queuing theory	2	-
	CMSI22-F3131	Biostatistics(1)	2	-
	CMSI22-F3141	Reliability	3	-
Third Year/ Chapter II	CMSI22-F3211	Mathematical Statistics(2)	3	-
	CMSI22-F3251	Operation Research(2)	3	-
	CMSI22-F3261	Information security	2	2
	CMSI22-F3241	Data Mining(1)	2	2
	CMSI22-F3231	Biostatistics(2)	2	-
	CMSI22-F3221	Regression Analysis(2)	3	-
		English Language	2	-
the fourth year/ Chapter I	CMSI22-F4121	Stochastic Processes(1)	3	-
	CMSI22-F4141	Design and Analysis of Experiments (1)	3	-
	CMSI22-F4151	Data Mining(2)	2	2
	CMSI22-F4161	Simulation	2	-
	CMSI22-F4111	Statistical Inference(1)	3	-
	CMSI22-F4131	Multivariate Analysis(1)	3	-
the fourth year/ Chapter II	CMSI22-F4221	Stochastic Processes(2)	3	-
	CMSI22-F4251	Intelligence Techniques	2	2
	CMSI22-F4231	Multivariate Analysis(2)	3	-
	CMSI22-F4241	Design and Analysis of Experiments (2)	3	-
	CMSI22-F4211	Statistical Inference(2)	3	-
		English Language	2	-
		Project	4	-

8. Expected learning outcomes of the program

Knowledge

1. The student learns modern statistical methods and the importance of statistics in various scientific, medical and economic fields, including humanity. 2. Teach the student the importance of statistics combined with mathematics and computer science. 3. Learns the ability to find possible scientific solutions to solve any problem.	1. Theory 2. Process 3. Student training/summer training 4. Graduation research

4. The student learned the ability to program based on various modern applied statistical programs and various programming languages by writing special programs to solve the problem. 5. The student learns to expand his imagination and establish probabilistic laws in solving and estimating problems. 6. The ability to develop sound ideas, build mathematical models for them, and estimate their features according to various statistical methods. 7. The ability to set appropriate hypotheses to solve any problem while testing them according to the appropriate statistical methods for the purpose of making the correct statement. 8. Developing the student's skills to link statistics and intelligence systems, which are based on analysis, deduction, and decision-making. 9. Providing the student with some basic rules for evaluating, building, programming, and analyzing statistical information systems on modern foundations. 10. Providing the student with sufficient information in analysis, design, and research.	
Skills	
1. The skill of deduction and analysis. 2. Mathematical and statistical solution skill. 3. The skill of comparing, building hypotheses, and making decisions. 4. The skill of building, analyzing and interpreting mathematical models. 5. The skill of discussing and making the right decisions. 6. Skill in using modern means, including computers. 7. Skill in using modern applied statistical programs and programming languages. 8. The skill of writing programs to solve and estimate problems. 9. The skill of searching for correct scientific information. 10. The skill of conducting scientific research, analyzing it, solving its problems, and drawing appropriate conclusions in solving them for the purpose of decision-making.	1. The ability to study group. 2. The ability to conduct scientific discussion among students. 3. The ability to develop skills among students. 4. Ability in discussion, analysis, and collective decision-making. Develop the ability to cooperate.

Ethics	
1. Demonstrate awareness of ethical issues related to data privacy, confidentiality, and intellectual property. 2. Adhere to ethical guidelines and professional standards in statistical analysis and informatics practices. 3. Embrace lifelong learning and stay updated with emerging trends and technologies in the field.	

9. Teaching and Learning Strategies

1. Continuous aspiration towards cognitive excellence in education, scientific research and professional service in various sciences.
2. Preparing students for the labor market and developing their abilities to interact and communicate with others through effective participation in the field training program.
3. Acquiring skills to present ideas and work within one team through graduation projects.
4. Qualifying students for postgraduate studies in the field of statistics, informatics, and operations research.
5. Preparing specialized scientific leaders through the graduate program.
6. Interaction with other sciences, especially mathematics and computers.

10. Evaluation methods

1. Electronic exams (on line).
2. Central and monthly examinations.
3. Daily exams.
4. Daily duties.
5. Scientific reports
6. Computerized laboratory examinations.

7. Graduation projects.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
professor	Science in statistics	Applied Statistics			1	
Assistant Professor	Science in statistics	Mathematical			6	
Assistant Professor	Science in statistics	Stochastic Processes			1	
Assistant Professor	Science in statistics	time series			2	
Assistant Professor	Science in statistics	Applied Statistics			3	
Teacher	Science in statistics	Mathematical			1	
Teacher	Science in statistics	Multivariate			1	
Teacher	Science in statistics	Biostatistics			1	
Teacher	Science in statistics	Spatial Statistics			1	
Teacher	Science in statistics	Applied Statistics			14	
Teacher	Computer	Artificial Intelligence			1	
Teacher	Computer	security			1	
Assistant teacher	Science in statistics	Applied Statistics			8	
Assistant teacher	Computer	Computer vision			1	
Assistant teacher	Law	Criminal law			1	

Professional Development
Mentoring new faculty members
1. E-learning. 2. Using the Internet. 3. Using modern means of communication. 4. Use modern means of communication. 5. Extracurricular activities. 6. Advanced training courses in learning modern programs. 7. Scientific statistical consultations and ways of developing and applying them in various fields.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty members such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion
1. Central admission to the Ministry of Higher Education and Scientific Research. **2. The student's average is on the central admission lists, with the exception of the children of teaching staff, the martyrs' building, and the privileges stipulated in the Ministry's instructions, as they are accepted according to desire for distribution among the scientific departments.**

13. The most important sources of information about the program
State briefly the sources of information about the program.

14. Program Development Plan
Transferring academic subjects for all levels in the Department of Statistics and Informatics to the Bologna track

Program Skills Outline

				Required program Learning outcomes											
Year/Level	Course Code	Course Name		Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
First year/ Chapter I	CMSI22-F1121	Elementary Statistics(1)		√	√	√	√	√	√	√	√	√	√	√	
	CMSI22-F1131	Informatics(1)		√	√	√	√		√	√	√		√	√	
		Basics Programming			√	√	√	√	√	√	√	√	√	√	√
	CMSI22-F1211	Calculus(1)		√	√	√	√	√	√	√	√	√	√	√	√
	CMSI22-F1141	Finite Mathematics			√			√					√	√	√
		Arabic Language			√	√		√	√	√	√		√	√	√
	CMSI22-F1161	Human rights		√	√		√	√	√	√		√	√	√	
First year/ Chapter II	CMSI22-F1221	Prices Index		√				√		√			√		
	CMSI22-F1231	Informatics(2)			√				√	√			√		
	CMSI22-F1241	Elementary Statistics(2)		√	√	√		√	√	√	√	√	√	√	√
	CMSI22-F1211	Calculus(2)		√	√	√		√	√	√	√	√	√	√	√
	CMSI22-F1251	MATLAB programming		√					√	√	√	√	√	√	√
	CMSI22-F2171	Democracy		√	√	√		√	√	√	√		√	√	√

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 Year/ Chapter I	CMSI22-F2111	Probability and random variables(1)	**Basic**	√				√	√	√	√	√		√	√
	CMSI22-F2121	Sampling Theory(1)	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	CMSI22-F2161	Data structures(1)	**Basic**		√	√	√		√	√	√		√	√	√
	CMSI22-F2151	Linear Algebra	**Basic**	√	√	√	√		√	√	√		√	√	√
	CMSI22-F2141	Time Series Analysis	**my choice**	√	√	√	√		√			√		√	√
	CMSI22-F2131	Numerical Analysis(1)	**my choice**						√				√		
	CMSI22-F2171	Teaching methods	**my choice**		√	√		√		√	√		√		
Second Year/ Chapter II	CMSI22-F2211	Probability and random variables(2)	**Basic**	√	√	√		√		√	√	√	√	√	√
	CMSI22-F2221	Sampling Theory(2)	**Basic**	√	√	√		√	√	√	√	√	√	√	√
	CMSI22-F2241	Databases	**Basic**		√				√			√			
	CMSI22-F2251	Differential Equations	**my choice**	√				√					√		
	CMSI22-F2231	Numerical Analysis(2)	**my choice**	√		√	√	√	√	√		√		√	√
	CMSI22-F2271	Principles of Economics	**my choice**	√		√	√	√	√	√		√		√	√
	CMSI22-F2261	Research Methodology		√		√	√	√	√					√	√
	CMSI22-F2281	English Language		√		√	√	√	√		√	√		√	√

Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
Third Year/ Chapter I	CMSI22-F3111	Mathematical Statistics(1)	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	CMSI22-F3151	Operation Research(1)	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	CMSI22-F3121	Regression Analysis(1)	Basic	√	√	√	√	√				√	√	√	√
	CMSI22-F3161	Information Systems Management	Basic		√				√	√	√		√		
	CMSI22-F3171	queuing theory	my choice	√	√	√	√		√	√	√		√		
	CMSI22-F3131	Biostatistics(1)	my choice	√	√	√	√	√				√			
	CMSI22-F3141	Reliability	my choice	√	√	√	√	√	√	√		√	√	√	
Third Year/ Chapter II	CMSI22-F3211	Mathematical Statistics(2)	Basic	√	√	√	√	√	√	√		√	√	√	
	CMSI22-F3251	Operation Research(2)	Basic	√				√	√	√		√			
	CMSI22-F3261	Information security	Basic		√				√				√		
	CMSI22-F3241	Data Mining(1)	Basic	√				√				√			
	CMSI22-F3231	Biostatistics(2)	my choice	√				√					√		
	CMSI22-F3221	Regression Analysis(2)	my choice		√	√	√	√	√	√	√	√	√		
		English Language	my choice		√				√	√	√	√	√		

Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
the fourth year/ Chapter I	CMSI22-F4121	Stochastic Processes(1)	Basic	√	√	√	√	√	√	√	√	√		√	√
	CMSI22-F4141	Design and Analysis of Experiments (1)	Basic	√	√	√	√	√	√	√	√	√		√	√
	CMSI22-F4151	Data Mining(2)	Basic	√	√	√	√	√	√	√	√	√		√	√
	CMSI22-F4161	Simulation	Basic	√	√	√	√		√				√	√	√
	CMSI22-F4111	Statistical Inference(1)	Basic	√				√				√			
	CMSI22-F4131	Multivariate Analysis(1)	Basic	√				√	√	√	√	√	√	√	√
the fourth year/ Chapter II	CMSI22-F4221	Stochastic Processes(2)	Basic	√				√	√	√	√	√	√	√	√
	CMSI22-F4251	Intelligence Techniques	Basic		√				√			√	√	√	√
	CMSI22-F4231	Multivariate Analysis(2)	Basic	√		√	√	√				√	√	√	√
	CMSI22-F4241	Design and Analysis of Experiments (2)	Basic	√		√	√	√	√	√	√	√	√	√	√
	CMSI22-F4211	Statistical Inference(2)	Basic	√		√	√	√	√	√	√	√			
		English Language	Basic	√		√	√		√				√		
		Project	Basic	√		√	√		√				√		

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