

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 - 2025



## **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: Tikrit ..University.....  
Faculty/Institute: Veterinary medicine .....  
Scientific Department: Microbiology.....  
Academic or Professional Program: Vaccines  
Final Certificate Named: Master Science in Microbiology.  
Academic System: Course and thesis.....  
Description Preparation Date: 5/10/2024  
File Completion Date 6 / 10/ 2024.

Signature:   
Head of Department Name:  
Prof. Assist. Dr. Sanna Ahmed Sauod  
Date: 6/10/2024

Signature:   
Scientific Associate Name:  
Prof. Dkheel Hussain  
Date: 6/10/2024

The file is checked by:  
Department of Quality Assurance and University Performance  
Director of the Quality Assurance and University Performance Department:  
Date: 6/10/2024  
Signature: 



  
Approval of the Dean

### **1. Program Vision**

The College of Veterinary Medicine at Tikrit University seeks to establish the program as a center of excellence in microbiology education and research and creating a stimulating learning environment that fosters student engagement and scientific inquiry and developing strategic partnerships to translate research into practical, impactful applications. In addition, contributing to advancements in human and animal health, food security, environmental sustainability, and technological innovation Supporting the sustainable development of the local and global community.

### **2. Program Mission**

The College of Veterinary Medicine at Tikrit University seeks to provide high-quality education and training in Microbiology to equip students with strong theoretical knowledge and practical skills establishing a research-intensive environment, monitoring research projects and plans, and developing them to protect animal resources, and solve problems related to human and animal health, as well as food safety. To promote collaboration and knowledge exchange between students, faculty members, and industry partners to develop critical thinking and communication skills in graduate students. Additionally, Prepare committed researchers who apply ethical principles and technical/scientific knowledge in the field of Microbiology, contributing to the improvement of societal and environmental conditions

### **3. Program Objectives**

- Comprehensive coverage of the core disciplines within Microbiology, from bacteria to parasites, immunology, and vaccinology.
- Developing problem-solving and analytical capabilities to address challenges in animal health, zoonotic diseases, and fundamental microbiological sciences
- Cultivating robust research skills, critical thinking, and effective communication abilities in students.
- Enabling students to actively participate in and contribute to research and academic teams at various levels.
- Preparing students to engage in high-level scientific discourse and presentation at conferences and other academic forums

### **4. Program Accreditation**

National program accreditation standards for higher education institutions in Iraq have been prepared based on the European Association of Establishments for Veterinary Education (EAEVE)

<b>5. Other external influences</b>				
Laboratories Animal facilities, Library and internet resources, Slaughterhouses, Veterinary hospital and Veterinary projects				
<b>6. Program Structure</b>				
<b>Program Structure</b>	<b>Number of Courses</b>	<b>Study Unit</b>	<b>Percentage</b>	<b>Reviews*</b>
<b>Institution Requirements</b>	45			
<b>College Requirements</b>	Yes			
<b>Department Requirements</b>	Yes			
<b>Summer Training</b>				
<b>Other</b>				

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

<b>7. Program Description</b>				
<b>Year/Level</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credit Hours</b>	
2024-2025/ MSc.		Vaccines	Theoretical vaccines	

<b>8. Expected learning outcomes of the program</b>	
<b>Knowledge</b>	
	<ol style="list-style-type: none"> <li>1. Understand the scientific and historical basis for vaccines development, including the techniques used in manufacturing modern vaccines.</li> <li>2. Learning the basic concepts of the immune system and the mechanisms of activating it with vaccines.</li> <li>3. Evaluate and analyze data regarding the safety and effectiveness of vaccines from clinical trials and research studies.</li> <li>4. Understand the regulatory and legal framework surrounding vaccine development and licensing and approval processes.</li> <li>5. learning effective communication and interpersonal skills to convey vaccine-related information to diverse audiences of specialists and non-specialists.</li> <li>6. Develop the ability to contribute to the development of health strategies and programs related to vaccinology at the national and international levels.</li> </ol>
<b>Skills</b>	
	<ul style="list-style-type: none"> <li>• Preparing seminars on advanced topics in vaccines using the latest sources.</li> <li>• Communication and presentation skills through the effective and professional presentation and discussion of advanced topics in vaccinology.</li> <li>• Actively contributing to scientific discussions and specialized dialogues.</li> </ul>

### 11. Faculty

#### Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)	Number of the teaching staff	
	General	Special		Staff	Lecturer
Assistant professor	Biology	Microbiology and Immunology		staff	1

- Preparing and writing research reports and scientific articles in the field of vaccinology.

#### Ethics

- Demonstrating ethical and professional conduct in directing research and applying its results.
- Contributing to the development of knowledge and practices in the field of vaccines
- Participating in advanced academic discussions and events related to the specialization.

### 9. Teaching and Learning Strategies

- Coverage of the fundamental principles and concepts in the field of vaccinology.
- Utilization of a diverse range of teaching techniques, such as lectures, seminars, case studies, and discussions.
- Encouraging active student participation and developing critical thinking skills, as well as providing laboratory-based educational experiences to cultivate practical skills.
- Training students with the latest techniques and equipment used in the field of vaccinology.
- Directing on developing research capabilities, including research design, data analysis, and academic writing.
- Continuous assessment and feedback through the application of comprehensive evaluation methods, including exams and presentations

### 10. Evaluation methods

- Mid-term exam and a final course exam to assess knowledge, understanding, and reasoning about the student's ability level and comprehension of the course content.
- Scientific discussion sessions to measure the student's ability to present information, select appropriate responses, and prepare the students to write scientific reports by choosing important topics in the field of vaccinology.
- Providing mechanisms to monitor student progress and provide academic feedback and guidance.

### 12. Acceptance Criterion

According to the regulations, the postgraduate program in microbiology at the College of Veterinary Medicine, University of Tikrit

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

- The official website of the Veterinary Medicine Program at the University of Tikrit.
- The student handbook or academic guide
- Assessments and rankings of the program by accreditation agencies or academic institutions
- The Postgraduate Studies and Follow-up Unit

### 14. Program Development Plan

To link the theoretical information that the student receives to clinical reality, formal and informal activities to develop a conducive academic atmosphere by

•**Formal activities include:**

- 1)Regular classroom lectures, laboratory practical work, and field activities
- 2)Updating teaching methods and following up on new developments in the educational process
- 3)Encouraged students to use multiple resources such as the Internet, library holdings, and outside experts to improve student learning in higher education through analytics, resources, and advice.

•**Informal activities include:**

Discussions, research seminar presentations, student involvement in research collaborations, and attendance at public lectures on the latest developments in veterinary or human immunology research.



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
2024-2025		Vaccines	Optional		√	√	√		√	√			√	√	

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

## Course Description Form

1. Course Name:	Vaccines
2. Course Code:	
3. Semester / Year:	2024-2025/ postgraduate
4. Description Preparation Date:	5/10/2024
5. Available Attendance Forms:	Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)	30 theoretical hours + one theoretical hour per week
7. Course administrator's name (mention all, if more than one name)	Name: Assist.Prof.Dr. Agharid Ali Hussein email: agharidalrasheed@tu.edu.iq
8. Course Objectives	<ul style="list-style-type: none"> <li>The program aims to provide students with a comprehensive and advanced understanding of the types of traditional and advanced vaccines and to familiarize them with the mechanisms of the vaccines in immunizing the body to resist infectious diseases and viral and bacterial epidemics.</li> <li>Developing students' skills in conducting experimental research and analyzing vaccine results.</li> <li>Enhancing students' abilities in scientific discussion and effective presentation of advanced information in this specialty.</li> <li>Keeping up with the latest developments and emerging trends in the field of vaccines and related medical application</li> </ul>
9. Teaching and Learning Strategies	<ul style="list-style-type: none"> <li>Interactive lectures: presenting basic concepts and theories and encouraging discussions and dialogues between students and lecturers.</li> <li>Make efforts to develop analytical thinking and problem-solving skills and improve scientific research and writing skills.</li> <li>Group discussions, debates, and exchange of views and ideas between Postgraduate students and supervisors. Enhancing communication and critical thinking skills, and encouraging students to use the central and digital libraries as one of the learning methods</li> </ul>

### 10. Course structure

**Course level: postgraduate**

**Course Name: Theoretical Vaccines**

**Semester: Second**

Evaluation methods	Learning methods	Subjects name	Learning methods outcomes	Hours	weeks
Questions, and discussion	Presenting the lecture using (PPT) slides, with clarification and explanation	Introduction to Vaccines and Vaccination	A brief history of vaccines and vaccination Designing vaccines: immunological considerations	1	1
Questions, and discussion	Presenting the lecture using (PPT) slides, with clarification and explanation	Live Attenuated Vaccines	Live Attenuated Vaccine Categories Live Attenuated Viral and bacterial Vaccines Advantages and disadvantages of Live Attenuated Vaccines	2	3-2
Mid-term exam					4
Questions, and discussion	Presenting the lecture using (PPT) slides, with	inactivated vaccines	Historical events Vaccine safety	1	5

	clarification and explanation		Inactivation by Formaldehyde and $\beta$ -propiolactone New inactivation methods		
Questions, and discussion	Presenting the lecture using (PPT) slides, with clarification and explanation	Nontraditional Vaccine: Subunit Vaccines	Design Selection of Vaccine Immunogen Vaccine Delivery Route Immunization/Vaccination/Schedule Vaccine Formulation Stability	2	7-6
Questions, and discussion	Presenting the lecture using (PPT) slides, with clarification and explanation	Glycoconjugate vaccines	The development of vaccines against polysaccharide encapsulated pathogens Glycoconjugate-based vaccines The challenge of developing new glycoconjugate vaccines Protein Glycan Coupling Technology	1	9-8
Questions, and discussion	Presenting the lecture using (PPT) slides, with clarification and explanation	Recombinant vaccines	Recombinant vaccine strategies advantages in using recombinant :subunit vaccines	2	11-10
Mid-term exam					<b>12</b>
Questions, and discussion	Presenting the lecture using (PPT) slides, with clarification and explanation	Virus-like particles (VLPs)	Define of Virus-like particles (VLPs) Features of VLPs The main differences between VLPs and traditional vaccines Nanoparticle properties of VLPs VLPs Immunogens Types of VLPs non-enveloped and enveloped	2	<b>13-14</b>
Questions, and discussion	<b>Presenting the lecture using (PPT) slides, with clarification and explanation</b>	<b>Vaccine Adjuvants</b>	The elements of a vaccine Proposed mechanisms of action of adjuvants Adjuvants as delivery vehicles and immunostimulatory molecules <b>Types of adjuvants</b>	2	15
<b>Final exam</b>					

#### 11. Course Evaluation

Student performance is evaluated through the following assessments: Midterm Examination (30%) and Final Examination 70%.

#### 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<ol style="list-style-type: none"> <li>Lectures by the course instructor.</li> <li>Plotkin's Vaccines Book / Seventh Edition /2018 Edited by: Stanley A. Plotkin, Walter A. Orenstein, ... Kathryn M. Edward</li> </ol>
Main references (sources)	<ol style="list-style-type: none"> <li>Vaccine Design: Methods and Protocols Volume 2: Vaccines for Veterinary Diseases Edited by Sunil Thomas.</li> </ol>
Recommended books and references (scientific journals, reports...)	<ul style="list-style-type: none"> <li>Books: <ol style="list-style-type: none"> <li>Mucosal Immunology of Vaccines by Jiri Mestecky, Zina Moldoveanu, Michael W. Russell</li> <li>Vaccine Adjuvants and Delivery Systems by Manmohan Singh, Derek O'Hagan</li> </ol> </li> </ul>

	<p>3. "The Vaccine Book by Barry R. Bloom, Paul-Henri Lambert</p> <ul style="list-style-type: none"> <li>• Journals: <ol style="list-style-type: none"> <li>1. Vaccine</li> <li>2. Human Vaccines &amp; Immunotherapeutics</li> <li>3. Expert Review of Vaccines</li> <li>4. Nature Reviews Disease Primers</li> </ol> </li> <li>• Reports: <ol style="list-style-type: none"> <li>1. World Health Organization (WHO) Position papers on vaccines</li> <li>2. Centers for Disease Control and Prevention (CDC) Vaccine recommendations and guidelines</li> <li>3. European Medicines Agency (EMA) - Vaccine evaluation authorization reports</li> <li>4. Periodic reports from the Advisory Committee on Immunization Practices (ACIP)</li> <li>5. Vaccine safety and efficacy data from the vaccine Adverse Event Reporting System (VAERS)</li> </ol> </li> </ul>
Electronic References, Websites	<ul style="list-style-type: none"> <li>• Vaccines &amp; Immunizations <a href="https://www.cdc.gov/vaccines/">https://www.cdc.gov/vaccines/</a></li> <li>• WHO - <a href="http://www.who.int/topics/vaccines/">www.who.int/topics/vaccines/</a></li> <li>• FDA - <a href="http://www.fda.gov/vaccines-blood-biologics">www.fda.gov/vaccines-blood-biologics</a></li> <li>• <a href="http://www.vaccine.org">www.vaccine.org</a></li> <li>• <a href="http://www.niaid.nih.gov">www.niaid.nih.gov</a></li> </ul>