

## Academic Program Description Form

University Name: **University of Al -Muthanna**

Faculty/Institute: **College of Veterinary Medicine Scientific**

Department: **Veterinary Public Health**

Academic or Professional Program Name: **Master of Veterinary Public Health**

Final Certificate Name: **Master of Veterinary Public Health**

Academic System: **Semester**

Description Preparation Date: **14 / 11 / 2025**

File Completion Date: **15 / 11 / 2025**

Signature: 

Scientific Associate Name:

**Prof. Dr. Naer Abdulbari Madlool**

Date: **24/12/2025**

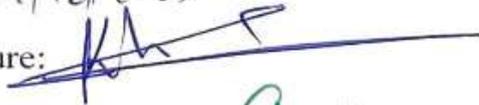
The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

**Prof. Dr. Khalid Hadi Kadhim**

Date: **24/12/2025**

Signature: 

Approval of the Dean 

**Asst. Prof. Muhammad Karim Hemed**

**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**

**2025-2026**

## **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.

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University Name: **University of Al -Muthanna**

Faculty/Institute: **College of Veterinary Medicine Scientific**

Department: **Veterinary Public Health**

Academic or Professional Program Name: **Master of Veterinary Public Health**

Final Certificate Name: **Master of Veterinary Public Health**

Academic System: **Semester**

Description Preparation Date: **14 / 11 / 2025**

**File Completion Date: 15 / 11 / 2025**

Signature:

Scientific Associate Name:

**Prof. Dr. Naer Abdulbari Madlool**

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

**Prof. Dr. Khalid Hadi Kadhim**

Date:

Signature:

**Approval of the Dean**

**Asst. Prof. Muhammad Karim Hemed**

## Academic Program Description Form

University Name: **University of Al -Muthanna**

Faculty/Institute: **College of Veterinary Medicine Scientific**

Department: **Veterinary Public Health**

Academic or Professional Program Name: **Master of Veterinary Public Health**

Final Certificate Name: **Master of Veterinary Public Health**

Academic System: **Semester**

Description Preparation Date: **12 / 1 / 2026**

**File Completion Date: 12 / 1 / 2026**

Signature:

Head of Department Name:

**Asst. Prof. Dr. Hussein Bae Khudhur**

Date: **10/ 1 / 2026**

Signature:

Scientific Associate Name:

**Prof. Dr. Naer Abdulbari Madlool**

Date: **12/ 1 / 2026**

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

**Prof. Dr. Khalid Hadi Kadhim**

Date:

Signature:

**Approval of the Dean**

**Asst. Prof. Dr. Muhammed Karim Hemed**

## 1. Program Vision

Leadership in training veterinary professionals specialized in public health, contributing to the prevention of zoonotic diseases, enhancement of food safety, and protection of environmental health through education and scientific research, in line with national and global health challenge

## 2. Program Mission

"Providing a distinguished academic program in veterinary public health aimed at preparing scientifically and professionally qualified personnel capable of preventing zoonotic diseases, ensuring food safety, and contributing to environmental health protection through specialized education, scientific research, and community engagement—supporting sustainable development and promoting the health of humans, animals, and the environment in accordance with the 'One Health' approach

## 3. Program Objectives

- Qualifying specialized professionals in the field of veterinary public health with advanced scientific and practical knowledge and skills.
- Enhancing research capabilities in the areas of zoonotic diseases, food safety, and environmental health.
- Contributing to the prevention and control of animal-origin diseases that affect both human and animal health.
- Supporting public health programs through partnerships with health, agricultural, and environmental sectors.
- Raising veterinary health awareness and promoting the concept of "One Health" within the community.
- Keeping pace with global developments in veterinary public health through continuing education and international collaboration

## 4. Program Accreditation

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

## 5. Other external influences

Is there a sponsor for the program?

## 6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	4	7		
Department Requirements	6	20		
Thesis		9		
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

## 8. Expected learning outcomes of the program

### Knowledge

Learning Outcomes 1	Learning Outcomes Statement 1
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### Skills

Learning Outcomes 2	Learning Outcomes Statement 2
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Learning Outcomes 3	Learning Outcomes Statement 3
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### Ethics

Learning Outcomes 4	Learning Outcomes Statement 4
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Learning Outcomes 5	Learning Outcomes Statement 5
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## 9. Teaching and Learning Strategies

1. **Interactive Lectures:**
  - Delivering theoretical concepts using modern presentation methods while engaging students in discussions to deepen understanding.
2. **Problem-Based Learning (PBL):**
  - Utilizing real-life case studies to stimulate critical thinking, analyze complex veterinary public health issues, and propose appropriate solutions.
3. **Laboratory and Practical Work:**
  - Conducting laboratory experiments and field training to enhance practical skills related to diagnosis, food safety, and epidemiological investigations.
4. **Scientific Research:**
  - Training students to design and implement original research projects in veterinary public health using both quantitative and qualitative research tools.
5. **Field and Community Visits:**
  - Organizing visits to veterinary facilities, quarantine stations, slaughterhouses, and regulatory centers to observe real-world applications of veterinary public health.
6. **Presentations and Discussions:**
  - Encouraging students to deliver research presentations and scientific reports, and engage in group discussions to develop presentation and analytical thinking skills.
7. **E-Learning and Blended Education:**
  - Utilizing digital learning platforms to provide additional resources and enhance interaction, particularly in theoretical or internationally-focused courses.
8. **Self-Directed Learning:**
  - Encouraging students to conduct independent research and stay updated with the latest scientific sources and specialized references in veterinary public health.

## 10. Evaluation methods

Implemented at all stages of the program in general.

## 11. Faculty

### Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer

## **Professional Development**

### **Mentoring new faculty members**

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

### **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**

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

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

State briefly the sources of information about the program.

## **14. Program Development Plan**

## Program Skills Outline

			Required program Learning outcomes											
Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
			A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	

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

## Course Description Form\ Advanced meat hygiene

<b>1. Course Name:</b>	
<b>Advanced meat hygiene</b>	
<b>2. Course Code:</b>	
<b>VET664</b>	
<b>3. Semester / Year:</b>	
2 <sup>nd</sup> -2026	
<b>4. Description Preparation Date:</b>	
10/9/2025	
<b>5. Available Attendance Forms:</b>	
Attendance lectures	
<b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>	
3 T+2P/4	
<b>7. Course administrator's name (mention all, if more than one name)</b>	
Prof. Dr. Hussein Bae Khudhur                      husseinkhudhur @mu.edu.iq	
<b>8. Course Objectives</b>	
<p>Meat classification, chemical composition, study of modern slaughterhouses, meat preservation, and its suitability.</p> <p>Develop students' ability to examine animals, diagnose diseases transmitted through meat to consumers, and make appropriate judgments regarding their suitability for consumption.</p> <p>Teach students how to conduct the necessary laboratory tests to detect contamination of animal products with pathogens and adulterated substances.</p> <p>Introduce students to modern methods of meat preservation and preventing contamination.</p> <p>Introduce students to laboratory analysis of food components and detection of fraud.</p>	
<b>9. Teaching and Learning Strategies</b>	
<b>Strategy</b>	<ol style="list-style-type: none"> <li>1. Scientific lectures</li> <li>2. Discussion sessions</li> <li>3. Presentations by students</li> </ol>
<b>10. Course Structure</b>	

Assessment Method	Learning Method	Topic Title	Intended Learning Outcomes	Hours	Week
Exams and assignments	Theoretical lectures	Meat hygiene concepts	Meat hygiene concepts	3	1
Exams and assignments	Theoretical lectures	Conversion of muscle to meat	Conversion of muscle to meat	3	2
Exams and assignments	Theoretical lectures	Factors affecting meat quality	Factors affecting meat quality	3	3
Exams and assignments	Theoretical lectures	Meat spoilage	Meat spoilage	3	4
Exams and assignments	Theoretical lectures	The food chain and its linkage with hazards of food safety importance as well as disease prevention and legislation.	The food chain and its linkage with hazards of food safety importance as well as disease prevention and legislation.	6	5+6
Exams and assignments	Theoretical lectures	Abattoir Practice and Animal Product Technology	Abattoir Practice and Animal Product Technology	6	7+8
Exams and assignments	Theoretical lectures	Post-mortem inspection	Post-mortem inspection	6	9+10
Exams and assignments	Theoretical lectures			2	11
Exams and assignments	Theoretical lectures	pre-slaughter factors that affect red meat safety and animal welfare	pre-slaughter factors that affect red meat safety and animal welfare	2	12
Exams and assignments	Theoretical lectures			2	13
Exams and assignments	Theoretical lectures	Hazard Analysis & Critical Control Points (HACCP), food safety management	Hazard Analysis & Critical Control Points (HACCP), food safety management system, and food safety auditing.	2	14

		t system, and food safety auditing.			
Comprehensive final exam	<b>Comprehensive exam</b>	Final Exam		3	15
<b>Practical</b>					
practical exam	Practical lecture	Parts of slaughter house	Parts of slaughter house	2	1
practical exam	Practical lecture	Parts of poultry slaughter house	Parts of poultry slaughter house	2	2
practical exam	Practical lecture	Meat Processing and Byproducts	Meat Processing and Byproducts	2	3
practical exam	Practical lecture	Comparative between meat	Comparative between meat	4	4 5
practical exam	Practical lecture	Stunning and slaughter , bleeding	Stunning and slaughter , bleeding	4	6 7
practical exam	Practical lecture	Ante mortem inspection	Ante mortem inspection	4	8 9
practical exam	Practical lecture	Post mortem inspection	Post mortem inspection	6	10 11 12
practical exam	Practical lecture	Physical and chemical test of meat	Physical and chemical test of meat	6	13 14
		<b>Exam</b>		3	15

## 1. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports..... etc

## 2. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Gracey's Meat Hygiene 2014 Meat practical
Main references (sources)	Food microbiology Gracey's Meat Hygiene 2014
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	none



## Course Description Form\ Advanced Milk hygiene

<b>1. Course Name:</b>
Advanced Milk hygiene
<b>2. Course Code:</b>
<b>VET663</b>
<b>3. Semester / Year:</b>
2 <sup>nd</sup> -2026
<b>4. Description Preparation Date:</b>
10/9/2025
<b>5. Available Attendance Forms:</b>
Attendance lectures
<b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>
3 T+2 P/4
<b>7. Course administrator's name (mention all, if more than one name)</b>
Assist. Prof. Dr. Mussa Muhammed Ali
<b>8. Course Objectives</b>
Ensuring the health safety of milk and its derivatives by identifying sources of biological contamination (such as bacteria, viruses, parasites) and chemical contamination (such as drug and pesticide residues).
<ul style="list-style-type: none"><li>• Analyzing the health risks associated with untreated or unpasteurized milk and its impact on human and animal health.</li><li>• Understanding the role of milk as a vehicle for the transmission of zoonotic diseases (diseases shared between humans and animals), such as brucellosis and bovine tuberculosis.</li><li>• Applying food quality and safety standards (such as HACCP and ISO) throughout the milk production and processing chain.</li><li>• Promoting health awareness and veterinary control in dairy farms, collection centers, and processing facilities.</li><li>• Contributing to national public health policies by developing strategies for monitoring milk quality and improving consumer health.</li><li>• Supporting food security by improving milk quality and reducing losses caused by contamination or spoilage.</li></ul>
<b>9. Teaching and Learning Strategies</b>

<b>Strategy</b>	<ol style="list-style-type: none"><li>1. Scientific lectures</li><li>2. Discussion sessions</li><li>3. Presentations by students</li></ol>
10. Course Structure	

## 11. Course Structure ( Theoretical)

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3	The chemical composition of milk and factors that affect its composition	The chemical composition of milk and factors that affect its composition	Theoretical lectures	Daily and monthly exams and assignments
2	3	How to determine the suitability of milk and dairy products to related legal regulations, and gains knowledge on the determination of quality measurements	How to determine the suitability of milk and dairy products to related legal regulations, and gains knowledge on the determination of quality measurements	Theoretical lectures	Daily and monthly exams and assignments
3	3	Safe and hygienic production, and how to prepare hygiene programs in plants	Safe and hygienic production, and how to prepare hygiene programs in plants	Theoretical lectures	Daily and monthly exams and assignments
4	3	Milk quality	Milk quality	Theoretical lectures	Daily and monthly exams and assignments
5	3	Raw milk evaluation	Raw milk evaluation	Theoretical lectures	Daily and monthly exams and assignments
6-7	6	Somatic Cell Counts and Mastitis Infections and intoxications linked to the consumption of dairy products and the contaminants (antibiotics, disinfectants and metallic residues)	Somatic Cell Counts and Mastitis Infections and intoxications linked to the consumption of dairy products and the contaminants (antibiotics, disinfectants and metallic residues)	Theoretical lectures	Daily and monthly exams and assignments
				Theoretical lectures	Daily and monthly exams and assignments
9,8	6	Milk borne diseases and prevention strategies	Milk borne diseases and prevention strategies	Theoretical lectures	Daily and monthly exams and assignments
10,11,12	9	Hygiene and good manufacturing practice in milk	Hygiene and good manufacturing practice in milk processing	Theoretical lectures	Daily and monthly exams and assignments

		processing			
13,14	6	The chemical composition of milk and factors that affect its composition	The chemical composition of milk and factors that affect its composition	Theoretical lectures	Daily and monthly exams and assignments
15	3		Exam		

1. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .....etc	
2. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	none
Main references (sources)	<p>The Microbiology, Pathogenesis, and Zoonosis of Milk Borne Diseases: Milk Hygiene in Veterinary and Public Health (Tanmoy Rana (Editor) Academic Press, 2024</p> <p>Milk Hygiene and Safety Mohammad Rasheed Jaya Publishing House, 2015</p> <p>Integrated Food Safety and Veterinary Public Health S. Buncic CABI, 2006</p>
Recommended books and references (scientific journals, reports...)	.
Electronic References, Websites	none

## Course Description Form\ Reproductive and Metabolic disease

<b>1. Course Name:</b>	
Reproductive and metabolic disease	
<b>2. Course Code:</b>	
VET665	
<b>3. Semester / Year:</b>	
2 <sup>nd</sup> -2026	
<b>4. Description Preparation Date:</b>	
10/9/2025	
<b>5. Available Attendance Forms:</b>	
Attendance lectures	
<b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>	
3 T /3	
<b>7. Course administrator's name (mention all, if more than one name)</b>	
Assist. Prof. Dr. Mohammed Karim Hemed	
<b>8. Course Objectives</b>	
<ul style="list-style-type: none"> <li>• Identify the major diseases affecting farm animals and understand their impact on animal productivity.</li> <li>• Understand diagnostic and preventive approaches to control these diseases at both herd and community levels.</li> <li>• Explore the relationship between production diseases and human health, particularly zoonotic diseases.</li> <li>• Promote the concepts of biosecurity and the One Health approach in managing animal diseases.</li> <li>• Minimize economic losses and improve the quality and safety of animal-derived food product</li> </ul>	
<b>9. Teaching and Learning Strategies</b>	
<b>Strategy</b>	<ol style="list-style-type: none"> <li>1. Scientific lectures</li> <li>2. Discussion sessions</li> <li>3. Presentations by students</li> </ol>

## 11. Course Structure ( Theoretical)

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2	Metabolic disorder of poultry	Metabolic disorder of poultry	Theoretical lectures	Daily and monthly exams and assignments
2,3	4	Disorders of mineral metabolism	Disorders of mineral metabolism	Theoretical lectures	Daily and monthly exams and assignments
4	2	Lipid Storage Diseases	Lipid Storage Diseases	Theoretical lectures	Daily and monthly exams and assignments
5,6	4	Vitamin deficiency	Vitamin deficiency	Theoretical lectures	Daily and monthly exams and assignments
7	2	Nutritional disease in poultry	Nutritional disease in poultry	Theoretical lectures	Daily and monthly exams and assignments
8	2	Bad behavior disease and related with productivity	Bad behavior disease and related with productivity	Theoretical lectures	Daily and monthly exams and assignments
				Theoretical lectures	Daily and monthly exams and assignments
9,10	4	Reproductive disease in poultry	Reproductive disease in poultry	Theoretical lectures	Daily and monthly exams and assignments
11	2	Disorders of proteins, amino acids and nucleic acids metabolism	Disorders of proteins, amino acids and nucleic acids metabolism	Theoretical lectures	Daily and monthly exams and assignments
12	2	Metabolic acidosis and alkalosis	Metabolic acidosis and alkalosis	Theoretical lectures	Daily and monthly exams and assignments
13	2	Disorders of Carbohydrate metabolism	Disorders of Carbohydrate metabolism	Theoretical lectures	Daily and monthly exams and assignments
14	2	Abnormalities in Nitrogen Metabolism	Abnormalities in Nitrogen Metabolism	Theoretical lectures	Daily and monthly exams and assignments
15	2		Exam		

## 10. Course Structure

## 1. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports.... etc

## 2. Learning and Teaching Resources

Required textbooks (curricular books, if any)	none
Main references (sources)	<p>Production Diseases in Farm Animals: Pathophysiology, Prophylaxis and Health Management — Josef Johann Gross SpringerLink</p> <p>Veterinary Medicine: A Textbook of the Diseases of Cattle, Horses, Sheep, Pigs and Goats (Radostits et al (. Amazon 1+</p> <p>Farm Animals Diseases, Recent Omic Trends and New Strategies of Treatment — Rosa Estela Quiroz Castañeda (Editor ( IntechOpen</p> <p>Production Diseases in Farm Animals — Proceedings of the 12th International Conference (Editors Nanda P. Joshi &amp; Thomas H. Herdt ( Brill</p>
Recommended books and references (scientific journals, reports...)	.
Electronic References, Websites	none

## Course Description Form\ Advance animal nutrition

<b>1. Course Name:</b>	
Advance Animal nutrition	
<b>2. Course Code:</b>	
VET661	
<b>3. Semester / Year:</b>	
1st-2026	
<b>4. Description Preparation Date:</b>	
10/9/2025	
<b>5. Available Attendance Forms:</b>	
Attendance lectures	
<b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>	
2 T+ 2 P/3	
<b>7. Course administrator's name (mention all, if more than one name)</b>	
Assist. Prof. Dr. Hussein Bae Khudhur    husseinkhudur@mu.edu.iq	
<b>8. Course Objectives</b>	
<ul style="list-style-type: none"><li>• "Understanding the outcomes of animal and poultry nutrition, including the formulation and assessment of rations for various age groups of animals.</li></ul>	
<b>9. Teaching and Learning Strategies</b>	
<b>Strategy</b>	<ol style="list-style-type: none"><li>1. Scientific lectures</li><li>2. Discussion sessions</li><li>3. Presentations by students</li></ol>
<b>10. Course Structure</b>	

## 11. Course Structure ( Theoretical)

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2	Feed evaluation: -Energy evaluation system -Protein evaluation system - Minerals and vitamin availability	Feed evaluation: - Energy evaluation system -Protein evaluation system - Minerals and vitamin availability	Theoretical lectures	Daily and monthly exams and assignments
2	2	Computation of feed for sheep	Computation of feed for sheep	Theoretical lectures	Daily and monthly exams and assignments
3	2	Computation of feed for cattle, pregnant	Computation of feed for cattle, pregnant	Theoretical lectures	Daily and monthly exams and assignments
4	2	Computation of feed for poultry (broiler and <b>layer</b> )	Computation of feed for poultry (broiler and layer)	Theoretical lectures	Daily and monthly exams and assignments
5	2			Theoretical lectures	Daily and monthly exams and assignments
6-7	4	Determination mycotoxicosis in feed Feed evaluation, digestion , metabolism trials	Determination mycotoxicosis in feed Feed evaluation, digestion , metabolism trials	Theoretical lectures	Daily and monthly exams and assignments
				Theoretical lectures	Daily and monthly exams and assignments
9,8	4	Ration formulation	Ration formulation	Theoretical lectures	Daily and monthly exams and assignments
10,11,12	6	Feed evaluation: -Energy evaluation system -Protein evaluation system - Minerals and vitamin availability	Feed evaluation: - Energy evaluation system -Protein evaluation system - Minerals and vitamin availability	Theoretical lectures	Daily and monthly exams and assignments
13,14	4	Computation of feed for sheep	Computation of feed for sheep	Theoretical lectures	Daily and monthly exams and assignments
15	2		Exam		

## 11. Course Structure ( practical)

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1-3	6	Feed evaluation: -Energy evaluation system -Protein evaluation system - Minerals and vitamin availability	Feed evaluation: - Energy evaluation system -Protein evaluation system - Minerals and vitamin availability	Theoretical lectures	Daily and monthly exams and assignments
4	2	Computation of feed for sheep	Computation of feed for sheep	Theoretical lectures	Daily and monthly exams and assignments
5-6	4	Computation of feed for cattle, pregnant	Computation of feed for cattle, pregnant	Theoretical lectures	Daily and monthly exams and assignments
7-8	4	Computation of feed for poultry (broiler and layer)	Computation of feed for poultry (broiler and layer)	Theoretical lectures	Daily and monthly exams and assignments
9	2	Analytic methods: conventional, computer	Analytic methods: conventional, computer	Theoretical lectures	Daily and monthly exams and assignments
10	2	Determination mycotoxicosis in feed	Determination mycotoxicosis in feed	Theoretical lectures	Daily and monthly exams and assignments
11-12	4	Feed evaluation, digestion, metabolism trials	Feed evaluation, digestion, metabolism trials	Theoretical lectures	Daily and monthly exams and assignments
13-14	6	Ration formulation	Ration formulation	Theoretical lectures	Daily and monthly exams and assignments
15	2		Exam		

### 1. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports..... etc

### 2. Learning and Teaching Resources

Required textbooks (curricular books, if any)

none

Main references (sources)	Animal Nutrition Peter McDonald, Richard A. Edwards, J.F.D. Greenhalgh, C.A. Morgan, et al. "Ruminant Animal Nutrition: Principles and Practice" by D.C. Church
Recommended books and references (scientific journals, reports...)	-
Electronic References, Websites	none

## Course Description Form\ Food Microbiology

<b>1. Course Name:</b>	
Food Microbiology	
<b>2. Course Code:</b>	
VET660	
<b>3. Semester / Year:</b>	
1 <sup>ST</sup> -2026	
<b>4. Description Preparation Date:</b>	
17/9/2025	
<b>5. Available Attendance Forms:</b>	
Attendance lectures	
<b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>	
2 T +2 P /3	
<b>7. Course administrator's name (mention all, if more than one name)</b>	
Prof. Dr. Naer Abdulbari Madloul	
<b>8. Course Objectives</b>	
<ul style="list-style-type: none"> <li>• Identify milk-borne diseases and their public health significance.</li> <li>• Learn to assess microbial contamination of tools and equipment in slaughterhouses and food factories.</li> <li>• Study spoilage of milk and meat and their microbial causes.</li> <li>• Review food safety techniques and Hazard Analysis and Critical Control Points (HACCP).</li> <li>• Perform plate counts for various types of microorganisms.</li> <li>• Isolate and count yeasts, molds, and spores in food.</li> <li>• Learn methods for extraction and estimation of DNA/RNA from foods.</li> <li>• Apply microscopic staining techniques used in the food industry.</li> <li>• Train on immunological assays for detecting foodborne pathogens.</li> </ul>	
<b>9. Teaching and Learning Strategies</b>	
<b>Strategy</b>	<ul style="list-style-type: none"> <li>• Interactive lectures: Course explanations with short questions during lectures to increase engagement.</li> <li>• Brainstorming: Before each topic (e.g., food poisoning outbreak), students are asked to share experiences or examples.</li> <li>• Case studies: Analyze real cases of foodborne disease outbreaks or food spoilage.</li> <li>• Problem-based learning: Present a problem or scenario (e.g., contamination in a dairy factory) and ask students to find solutions.</li> <li>• Student presentations: Assign each student a brief presentation about a disease or food safety technique.</li> </ul>

- |  |  |
|--|--|
|  | <ul style="list-style-type: none"><li>• Group discussion: Divide students into small groups to discuss causes of spoilage or prevention methods.</li></ul> |
|--|--|

10. Course Structure
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## 11. Course Structure ( Theoretical)

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2	The chemical composition of milk and factors that affect its composition	Introduction	Theoretical lectures	Daily and monthly exams and assignments
2	2	students will be able to recognize major milk-borne diseases, their public health importance, and basic measures for their prevention and control.	Milk-borne diseases of public health significance	Theoretical lectures	Daily and monthly exams and assignments
3	2	students will be able to understand the steps of investigating food-poisoning outbreaks, identify sources and causes, and outline appropriate control measures	Food- poisoning outbreak investigation	Theoretical lectures	Daily and monthly exams and assignments
4	2	students will be able to perform and interpret microbiological assessments of equipment in abattoirs, meat, and milk plants to ensure hygiene and safety.	Microbiological assessment of equipment in abattoir/ meat/ milk plant	Theoretical lectures	Daily and monthly exams and assignments
5,6	2	students will be able to identify the causes, types, and prevention methods of milk spoilage.	Spoilage of milk	Theoretical lectures	Daily and monthly exams and assignments
7,8	2	students will be able to identify the causes, types, and prevention methods of meat spoilage.	Spoilage of meat	Theoretical lectures	Daily and monthly exams and assignments
9	2	Exam	Exam		
10	2	students will be able to identify major food-borne parasites, their transmission routes, and basic methods for their prevention and control.	Parasites transmitted by food	Theoretical lectures	Daily and monthly exams and assignments
11	2	students will be able to recognize major viral foodborne illnesses, their transmission, clinical features, and preventive measures.	Viral foodborne illnesses	Theoretical lectures	Daily and monthly exams and assignments
12	2	students will be able to identify major bacterial foodborne pathogens,	Bacterial foodborne	Theoretical lectures	Daily and monthly exams and

		their sources, clinical manifestations, and control measures.	<a href="https://www.cdc.gov/foodsafety/index.htm">https://www.cdc.gov/foodsafety/index.htm</a>	assignments	
13	2	students will be able to describe and apply key food safety techniques to prevent contamination and ensure safe food handling.	Food safety techniques	Theoretical lectures	Daily and monthly exams and assignments
14	2	students will be able to explain the principles of HACCP and apply its steps to identify, evaluate, and control food safety hazards.	Hazard Analysis and Critical Control Points (HACCP)	Theoretical lectures	Daily and monthly exams and assignments
15	2	Exam	Exam		

## 1. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports..... etc

## 2. Learning and Teaching Resources

Required textbooks (curricular book any)	none
Main references (sources)	<ul style="list-style-type: none"> <li>• Food Microbiology — Frazier &amp; Westhoff (A classic reference covering the basics of food microbiology and microbial spoilage.)</li> <li>• Food Microbiology — Prescott, Harley &amp; Klein (Comprehensive reference for microorganisms in foods, isolation methods, and disease identification.)</li> <li>• Fundamentals of Food Microbiology — Bibek Ray (Covers microbial contamination, foodborne diseases, and prevention methods.)</li> <li>• Foodborne Microorganisms of Public Health Significance — R. Robinson (Dedicated chapters for foodborne bacterial, viral, and parasitic diseases.)</li> </ul>
Recommended books and references (scientific journals, reports...)	Food Control International Journal of Food Microbiology Journal of Dairy Science Foodborne Pathogens and Disease Food Research International
Electronic References, Websites	<a href="https://www.who.int/health-topics/food-safety">https://www.who.int/health-topics/food-safety</a>

## Course Description – Bio statistics – Master’s Program – 2025–2026

Assist.Prof. Dr. Hadi Awad Hissuni

1. Course Title:
Biostatistics
2. Course Code:
VEM202
3. Semester/Year:
First Semester – Master’s Program 2025–2026
4. Course Description Preparation Date:
5. Available Attendance Forms
Student Name List (each student signs beside their name) and In-Class Tests
6. Total Credit Hours :
2 T /2
7. Course Coordinator and Email:
Assist. Prof. Dr. Hadi Awad Hissuni
8. Course Objectives
<ol style="list-style-type: none"><li>1. Provide students with fundamental knowledge of practical statistics and its applications across various scientific disciplines.</li><li>2. Develop skills in statistical analysis using appropriate tools and software such as SPSS and Excel.</li><li>3. Enhance students’ ability to interpret statistical results and link them to practical and research contexts.</li><li>4. Foster critical and scientific thinking in handling data to make sound, evidence-based decisions.</li><li>5. Prepare students to utilize statistics as an essential tool in scientific research and academic reporting.</li></ol>
9. Teaching and Learning Strategies
<ol style="list-style-type: none"><li>1. Concise theoretical lectures.</li><li>2. Practical training in the laboratory.</li><li>3. Collaborative learning and classroom discussions.</li><li>4. Assignments and presentations.</li></ol>
10. Assessment Strategies
<ol style="list-style-type: none"><li>1. Quizzes and assignments.</li><li>2. Reports and practical presentations.</li><li>3. Practical examination.</li><li>4. Comprehensive final examination.</li></ol>

## 11. . Course Structure (Practical)

Assessment Method	Learning Method	Topic Title	Intended Learning Outcomes	Hours	Week
Oral question / short discussion	Interactive lecture + discussion	Introduction	Identify the objectives of the course and the importance of statistical analysis in scientific research.	2	1
Short exercise on identifying tools	Practical demonstration + short training	SPSS tools	Distinguish between the basic tools in SPSS software and define their functions.	2	2
Practical assignment on data entry	Hands-on training	Entrance data to SPSS	Accurately enter and manage data in SPSS.	2	3
Hands-on SPSS application + short question	Brief explanation + practical application	Introduction and measures of central tendency	Interpret the concept of central tendency and apply its measures (mean, median, mode) using SPSS.	2	4
Analytical exercise and result discussion	Mini-workshop	Measures of dispersion	Calculate measures of dispersion (range, variance, standard deviation) and analyze their significance.	2	5
Practical exercise on small datasets	Practical application + case study	Chi-square distribution - population variance	Apply the Chi-square test to assess variance between a sample population and the whole population.	2	6
Applied question using SPSS	Problem-solving exercises	Chi-square distribution of fit goodness	Use the Chi-square test to measure the goodness of fit between observed data and expected models.	2	7
Practical exercise + result interpretation	Practical training + group comparison	t test	Apply T-tests (one-sample, independent samples, paired samples) and interpret the results.	2	8
Midterm exam (practical + theoretical)	Applied test	Exam	Evaluate their ability to analyze data and interpret statistical outputs in an integrated manner.	2	9
Short case study and curve interpretation	Case study + visual presentation	ROC curve analysis	Interpret the ROC curve and use it to evaluate the efficiency of statistical models.	2	10
Practical exercise on real datasets	Lecture + practical training	Analysis of variance	Apply Analysis of Variance (ANOVA) to compare the means of three or more groups.	2	11
Applied problem-solving and result interpretation	Applied problem-solving	Analysis of variance	Analyze ANOVA results and differentiate between types (one-way, two-way).	2	12
Group exercise on post-hoc tests	Applied workshop	Analysis of variance	Use post hoc tests to identify differences between groups.	2	13
Mini-project / practical report	Mini-project	Analysis of variance	Integrate knowledge in experimental design and apply ANOVA to complex datasets using SPSS.	2	14
Comprehensive final exam	Comprehensive exam	Final Exam	Demonstrate the ability to integrate statistical concepts, analyze data, and accurately interpret SPSS outputs.	3	15

## 12.

1. Midterm Exam: 20–30%
2. Practical activities and applications (SPSS exercises / assignments): 20–25%
3. Class participation and discussions: 10%
4. Final Exam: 40–50%

## 13. مصادر التعلم والتدريس

Required Textbooks	Field (2018) – <i>Discovering Statistics Using IBM SPSS</i>
Main References	George & Mallery (2019) – <i>IBM SPSS Step by Step</i>
Recommended Books and References (Journals, Reports)	<i>Journal of Applied Statistics</i> <i>Iraqi Journal of Statistical Sciences</i>
WebsiteS	<a href="#">Khan Academy – Statistics</a> , <a href="#">Coursera</a> , YouTube SPSS Tutorial

