Specification for Meat hygiene and control course

2025/2026

1-Basic information

1.	**Course title**	Meat hygiene and control							
2.	**Course code**	**501 (A) I**							
3.	**Department offering the course**	Food hygiene and control							
4.	**Number of hours**	**Theoretical**	**2**	**Practical**	**2**	**Other**	**0**	**Total**	**4**
5.	**Course Type**	√ **Obligatory** **Elective**							
6.	**Level**	5th year							
7.	**Semester**	First semester							
8.	**Academic program**	Bachelor Veterinary medicine (BVM)							
9.	**Faculty**	Faculty of Veterinary medicine							
10.	**University**	Benha University							
11.	**Name of course coordinator**	**Prof \ Amani Mohamed Salem**							
12.	**Course Specification Approval Date**	Faculty council/ 27-8-2025							
13.	**Course Specification Approval (Attach the decision/minutes of the department /committee/council ....)**	Department council/							

2-Course overview

- **Course contents written in the program by law:**

Abattoirs, ante-mortem inspection, method of slaughter and post-mortem inspection.

3- Intended learning outcomes of the course (ILOs):

	NARS outcomes		Course outcomes	
	Code	**Text**	**Code**	**Text**
Knowledge and understanding	**2.8.**	Veterinary medications, uses, marketing, the impact of drug residues on human health and quality control of pharmaceutical practices.	**a1**	Acknowledge the duties of a meat hygienist.

	2.13.	Public health, including food hygiene of animal origin and zoonotic diseases that are transmitted from animals to humans.	**a2**	Be aware of the various crucial elements and components used in abattoir construction.
			a3	Clearly describe the various ante-mortem and post-mortem examination procedures.
			a4	List the various methods of slaughter
			a5	Explain and define "affection of specific parts.
			a6	List the steps taken during a rigor-mortem.
	2.14.	Basics of law and ethical codes relevant to animals and food hygiene.	**a7**	Identify the variables that affect rigor-mortem.
			a8	Define and explain the diverse types, numbers and drainage area of lymph nodes found in various species.
			a9	Give an explanation of animal bleeding and some examples.
			a10	List the variables that affect bleeding
			a11	Describe the various bacteria that cause food poisoning and the symptoms of the poisoning, along with measures to prevent and control the bacteria.
			a12	Define and describe various meat preservation techniques
Intellectual skills	**4.5.**	Remain committed to life – long learning and updating / upgrading their biochemical sense and clinical skills.	**b1**	Differentiate between slaughtered animals that have been well and poorly bled.
			b2	Assess the accuracy of the bled animals' slaughtering procedure.
			b3	Differentiate precisely between the bleeding of live (warm) and dead (cold) animals.
			b4	Interpret abnormal odour and colour signals and apply them to your final assessment of the carcass.
			b5	Correlate the impact of rigor-mortis on the quality of the meat.
			b6	Distinguish between ritual and non-ritual methods of animal slaughter.
			b7	Link between meat quality and the stresses created during pre-slaughter care at the farm, market, transportation, and lairage.
			b8	Propose a different approach to improve pre-slaughter care at the farm, market, transportation, lairage, and

				abattoir.
			b9	Pick an abattoir design that will enable high performance and production rates.
Practical skills	**3.6.**	Write a report about hygiene and safety of food of animal origin for human consumption.	**c1**	c.1.Collect samples at right time, right site, right condition and complete right data (case history &labeling of sample). c.1.2. Preserve suspected carcasses and organ sample using suitable methods of preservation. c.1.3. Prepare different forms of samples under complete aseptic conditions.
			c2	c.2.1- identify different significances of stamping.. c.2.2- differentiate among carcasses of slaughtered animal c.2.3-differntiate meat cuts and organs of different species.
	3.12.	Correctly deal with procedures related to food hygiene, public health issues, notifiable diseases and disposal of animal wastes	**c3**	c.3.1- biological differentiation of meat cuts and organs of different species. c.3.2- Chemical differentiation of meat cuts and organs of different species. c.3.3- scope of recent techniques of meat adulteration
			c4	c.4.1- Prepare Chemical reagent of chemical tests c.4.2- Apply proper procedure of physical & Chemical tests to differentiate between well bled and ill bled slaughtered animals. c.4.3- Detect results of tests
			c5	c.5.1- Manipulate different equipments used in measurement of pH of muscle. c.5.2- Identify different methods used in measurement of pH of muscle. c.5.3- Standardize pH meter in buffer solution c.5.4- Examine and detect the changes in pH of muscle in normal and abnormal (spoiled meat). c.5.5- Describe change of color of

				colorimetric method used in measurement of pH of muscle with change of pH degree during different phases of rigor mortis
			c6	c.6.1- Apply boiling & Roasting and Rotheras test for detection of abnormal odour c.6.2- Apply Rapid phase ,Martins and alcohol ether tests detection of abnormal color. c.6.3- Detect results of tests and give judgment.
			c7	c.7.1- Identify the freshness of meat by lead acetate test, copper sulphate test, E.R.V, peroxide test and Eber's test c.7.2-Identify protein decomposition by evaluation of TVN content c.7.3- Identify fat rancidity by evaluate TBA value.
			c8	c.8.1- Describe organoleptic changes in spoiled meat. c.8.2- Apply biosensors, smart labelling and electronic nose as novel techniques for detection of meat spoilage.
	3.13.	Minimize the risk of contamination, cross infection and predisposing factors of diseases.	**c9**	c.9.1- Identify the different meat borne parasites. c.9.2-examine meat for presence of viable cysticerci .c.9.3-examine meat for presence of trichenella spiralis. c.9.4- examine meat for presence of Sarcosporidia.
			c10	c.10.1- differentiate between different pathological lesions in carcasses and organs of different slaughtered animals c.10.2- give suitable judgement with applying hygienic measures.
Transferable skills	**5.1.**	Work under pressure and / or contradictory conditions	**d1**	Work under pressure and/or in a contradictory environment in contain codes.
	5.2.	Function in a multidisciplinary team	**d2**	Work as part of a multidisciplinary team to complete a research paper.
	5.3.	Communicate appropriately	**d3**	Communicate with lecturers and

		verbally and nonverbally		classmates both verbally and nonverbally.
	5.5.	Search for new information and technology as well as adopt life–long self learning ethics	**d4**	Search and presentation abilities

4- Teaching and learning methods					
Lectures	√	**Discussion & seminar (self-learning)**	√	**Practical**	√
Presentation & movies	√	**Problem solving**	√	**Brain storming**	√
Others	**Abattoir visit**				

- Course contents:

Number of the Week	**Scientific content of the course (Course Topics)**	**Expected number of the Learning Hours**				
		Total Weekly hours	**Theoretical teaching (lectures/discussion groups/ .....)**	**Training (Practical/ Clinical/ .....)**	**Self-learning (Tasks/ Assignments/ Projects/ ...)**	**Other**
W1	Pre-Slaughter care	**4**	**1**	**0**		**0**
	Anti -Mortum Examination		**1**	**2**		**0**
W2	Slaughtering Methods	**4**	**1**	**0**		**0**
	Emergency Slaughter		**1**	**2**		**0**
W3	Bleeding	**4**	**1**	**0**	**Formative quiz(self-learning)**	**0**
	Rigor-mortis		**1**	**2**		**0**
W4	Post- Mortum Examination	**4**	**1**	**0**		**0**
	Beef Wholesale Cuts		**1**	**2**		**0**
W5	Abnormal Conditions of food animals	**4**	**2**	**2**		**0**
W6	Slaughter Malpractices	**4**	**2**	**2**	**Formative quiz(self-learning)**	**0** **0**
W7	**Semester works and Mid-term exam**					
W8	Affections of Specific Parts	**4**	**2**	**2**		**0**

W9	Bacterial and Viral Diseases	**4**	**2**	**2**	**Formative quiz(self-learning)**	**0**
W10	Lymphatic System	**4**	**2**	**2**		**0**
W11	T. B.	**4**	**2**	**2**		**0**
W12	Parasitic diseases 1	**4**	**2**	**2**	**Formative quiz(self-learning)**	**0**
W13	Parasitic diseases 2	**4**	**2**	**2**		**0**
W14	Scope on Food Safety	**4**	**2**	**2**		**0**
W15	**Practical exam**					

5- Assessment timing and grading:

a- Assessment methods (summative and formative)

1. **Formative assessment**: including (weekly quizzes, homework assignments and surveys).
2. **Summative assessment** including (quizzes, class activates, Mid-term exam, practical exam, oral exams and final written exams).

b- Assessment schedule and weight

Assessment method	Timing	Grade	Percent
Mid-term exam	7^{th} week	15	15%
Field training(Abattoir visits)	At 2nd week		
Other (Mention)(Abattoir visits report)	After abattoir visit		
Formative assessment	Throughout semester	-	-
Practical exam	15^{th} week	20	20%
oral exam	End of semester	15	15%
Written exam	End of semester	50	50%
Total		100	100

6- Learning resources and supportive facilities:

Learning	**Main reference**	**Student handbook**
	Essential books (text books)	• Bn Kowale (2008) Methods in Meat Science • Potter, N.N. (2001) Food science

resources		• Bn Kowale (2008) Methods in Meat Science.
	Periodicals, Web sites, . . . etc	• J. of food protection. • J. of food technology • Benha veterinary medical journal • www.WHO.int.org • www.ekb.eg
	Learning platform	Thinqi
supportive facilities	**Devices & instruments**	As listing in device guideline
		• Teaching hall (Data show and White board). • Equipped Department laboratory. • Farm animal education. • Central laboratory.

Matrices:

A- Content and ILOs matrix:

Topic	A) Knowledge and understanding	B) Intellectual skills	C) Professional and practical skills	D) General and transferable skills
Pre-Slaughter care Anti -Mortum Examination	**a1**	-	-	**d1**
Slaughtering Methods Emergency Slaughter	**a3**	**b9,**	**c1,c2,**	**d2 ,d3, d4**
Bleeding Rigor-mortis	**a1**	**b7, b8**	-	**d2 ,d3, d4**
Post- Mortum Examination Beef Wholesale Cuts	**a1**	**b7, b8**	**c1,c2,**	**d2 ,d3, d4**
Abnormal Conditions of food animals	**a9, a10**	**b1, b2, b3**	c1,c2,	**d2 ,d3, d4**
Slaughter Malpractices	**a4**	**b6**	**c1,c2,**	**d2 ,d3, d4**
Affections of Specific Parts	**a2, a6,a7,a8**	**b4,b5,**	**c1,c2,c3,c4,c5,c6,c7,c8,c9,c10,**	**d2 ,d3, d4**
Bacterial and Viral Diseases	**a2, a6,a7,a8**	**b4,b5,**	**c1,c2,c3,c4,c5,**	**d2 ,d3, d4**
Lymphatic System	**a2, a6,a7,a8**	**b4,b5,**	**c1,c2,c3,c4,c5,**	**d2 ,d3, d4**
T. B.	**a2, a6,a7,a8**	**b4,b5,**	**c1,c2,c3,c4,c5,**	**d2 ,d3, d4**
Parasitic diseases	**a 11**	**b4,b5,**	**c1,c2,c3,c4,c5,c6,c7,c**	**d2 ,d3, d4**

			8,c9,c10	
Scope on Food Safety	**a 12**	**b4,**	**c1,c2,c3,c4,c5,c6,c7,c 8,c9,c10**	**d2 ,d3, d4**

B- Teaching and learning methods and ILOs matrix:

Course ILOs		**Teaching and Learning methods**						
		L	**P&M**	**D&s**	**P(TPL)**	**Ps**	**Bs**	**ATP**
Knowledge and understanding	**a1**	√	√	√			√	
	a2	√	√	√			√	
	a3	√	√	√			√	√
	a4	√	√	√			√	√
	a5	√	√	√			√	√
	a6	√	√	√			√	√
	a7	√	√	√			√	√
	a8	√	√	√			√	√
	a9	√	√	√			√	√
	a10	√	√	√			√	√
	a11	√	√	√			√	√
	a12	√	√	√			√	√
Intellectual skills	**b1**	√	√	√		√	√	√
	b2	√	√	√		√	√	√
	b3	√	√	√		√	√	√
	b4	√	√	√		√	√	√
	b5	√	√	√		√	√	√
	b6	√	√	√		√	√	√
	b7	√	√	√		√	√	√
	b8	√	√	√		√	√	√
	b9	√	√	√		√	√	√
Professional and practical skills	**c1**		√		√	√	√	√
	c2		√		√	√	√	√
	c3		√		√	√	√	√
	c4		√		√	√	√	√
	c5		√		√	√	√	√
	c6		√		√	√	√	√
	c7		√		√	√	√	√
	c8		√		√	√	√	√
	c9		√		√	√	√	√
	c10		√		√	√	√	√
General skills	**d1**	√						√
	d2	√			√			√
	d3	√	√		√			√
	d4	√	√	√				√

L: Lecture**, P&M:** Presentations & Movies**, D&S:** Discussions & Seminars (self-learning), **P(TPL):** Practical, **Ps:** Problem solving, **Bs:** Brain storming**, ATP:** Abattoir visit, Training, Project

C- Assessment methods and ILOs matrix:

Course ILOs		Assessment method				
		Formative assessment	Mid-term exam	Oral	Practical	Written
Knowledge and understanding	a1	√	√	√		√
	a2	√	√	√		√
	a3	√	√	√		√
	a4	√	√	√		√
	a5	√	√	√		√
	a6	√	√	√		√
	a7	√	√	√		√
	a8	√	√	√		√
	a9	√	√	√		√
	a10	√	√	√		√
	a11	√	√	√		√
	a12	√	√	√		√
Intellectual skills	b1	√	√	√		√
	b2	√	√	√		√
	b3	√	√	√		√
	b4	√	√	√		√
	b5	√	√	√		√
	b6	√	√	√		√
	b7	√	√	√		√
	b8	√	√	√		√
	b9	√	√	√		√
Professional and practical skills	c1	√			√	
	c2	√			√	
	c3	√			√	
	c4	√			√	
	c5	√			√	
	c6	√			√	
	c7	√			√	
	c8	√			√	
	c9	√			√	
	c10	√			√	
General skills	d1	√				
	d2	√				
	d3	√		√		
	d4	√				

Name and Signature Course Coordinator	Name and Signature Program Coordinator
Prof. Amani Mohamed Salem	**Prof. Dr. Mahmoud Abouelroos**