

## Specification for Milk control, Hygiene, Safety and Technology (B) 2025/2026

### 1-Basic information

1.	Course title	Milk control, Hygiene, Safety and Technology (B)							
2.	Course code	FHS.327							
3.	Department offering the course	Food Hygiene and Control							
4.	Number hours	Theoretical	2	Practical	1(2)	Other	0	Total	3
5.	Level	3 <sup>rd</sup> year							
6.	Semester	Spring							
7.	Course Type	√ Obligatory Elective							
8.	Academic program	Bachelor of Veterinary Medicine (BVM)							
9.	University	Benha University							
10.	Faculty	Veterinary medicine							
11.	Name of course coordinator	Prof. Dr. Ekbal M. A. Ibrahim							
12.	Course Specification Approval Date	Faculty council/ 27-8-2025							
13.	Date of Approval	Department council on 22/7/2025							

### 2-Course overview

- Course contents written in the program bylaw:

Properties of fats & oils; Sampling , physical constants; chemical constants; specific test for fats and oils; adulteration of butter with fats & oils, margarine & concentrated margarine, Eggs; formation & structure of egg, chemical composition, nutritive value, egg faults, preservation of eggs, diseases transmitted through eggs, microbiological examination of eggs, antimicrobial defense mechanisms in eggs. Dairy technology & preservation of cream, butter & ghee, cheese, fermented milk, concentrated milk, powder, infant's food and ice cream.

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### 3- Course Learning Outcomes (CLOs):

NARS ILOS			Course ILOS	
	Code	Content	Code	Content
Knowledge and understanding	2.8	Veterinary medications, uses, marketing, the impact of drug residues on human health and quality control of pharmaceutical practices.	a1	Describe the public health of milk products consumption as food of animal origin and know the diseases that transmitted to human.
	2.13	Public health, including food hygiene of animal origin and zoonotic diseases that are transmitted from animals to humans.		
	2.14	Basics of law and ethical codes relevant to animals and food hygiene	a2	List and understand the basic laws, legislatives and ethical codes relevant to milk products hygiene.
Intellectual skills	4.1	Foster critical thinking and scientific curiosity	b1	Determine efficient production of milk products, characteristics of edible fats and oils, besides hygiene of egg and egg products.
			b2	Analyze the sources of contamination at factory level with spoilage and/or pathogenic microorganisms and develop preventive measures through effective control of their sources of contamination.
			b3	Decide proper heat treatment method that suits different milk products
	4.5	Remain committed to life – long learning and updating / upgrading their biochemical sense and clinical skills	b4	Modify and enhance sanitation programs for applying in dairy factories, and during transportation, and storage
Practical skills	3.6.	Write a report about hygiene and safety of food of animal origin for human	c1	Practice the chemical and physical analysis any milk product sample.
			c2	Perform methods to detect the

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				adulterated milk products and determine the foreign material added
	3.12	Correctly deal with procedures related to food hygiene, public health issues, notifiable diseases and disposal of animal wastes.	c3	Diagnose any unauthorized preservative added to milk products and their defects.
			c4	Manage how to distinguish high quality product from bad quality one
	3.13	Minimize the risk of contamination, cross infection and predisposing factors of diseases.	c.5	Train how to distinguish different microbial and/or non-microbial defects in milk products
			c.6	Practice how to isolate any pathogenic microorganisms that may contaminate milk products
			c.7	Write reports professionally in milk hygiene
General skills	5.1	Work under pressure and / or contradictory conditions	d1	Work under pressure during lab session
	5.3	Communicate appropriately verbally and nonverbally	d2	Communicate effectively with lab collage
	5.5	Search for new information and technology as well as adopt life-long self-learning ethics.	d3	Search for new information in field of milk hygiene
	5.6	Utilize computer and internet skills	d4	Utilize computer and internet skills, read paper via internet in field of milk hygiene

#### 4- Teaching and learning methods

Lectures	√	Discussion & seminar	√	Practical	√
Presentation & movies	√	Problem solving	√	Brainstorming	√
Others					

### 5- Course contents:

Week [W]	Topics	Theoretical	Laboratory [practical]	Self-learning (Tasks/ Assignments/ Projects/ ...)	Total
W1	Introduction and overview of milk products	2	1(2)	0	(3)
W2	Probiotics in dairy industry Starter culture activity	2	1(2)	0	(3)
W3	Cream, Butter and related butter products (Technology & examination)	2	1(2)	Formative quiz	(3)
W4	Cheese varieties and technology	2	1(2)	0	(3)
W5	Cheese defects, abnormalities and examination	2	1(2)	0	(3)
W6	Fermented milks ; Functional fermented milk (Technology & examination)	2	1(2)	Formative quiz	(3)
W7	Semester work (one hour exam)	-	-	-	-
W8	Concentrated milk products (Technology & examination)	2	1(2)	0	(3)
W9	Dried milk and infant milk (Technology & examination)	2	1(2)	0	(3)
W10	Frozen desserts (Technology & examination)	2	1(2)	Formative quiz	(3)
W11	Food poisoning and sanitation programs	2	1(2)	0	(3)

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W12	Labeling and legalization	2	1(2)	0	(3)
W13	HACCP	2	1(2)	0	(3)
W14	Edible fats and oils, Egg and egg products	2	1(2)	Formative quiz	(3)
W15	Practical exam	-	-	-	-

## 6- Methods of students' assessment

### a- Assessment methods (summative and formative)

1. **Formative assessment:** including (weekly quizzes, homework assignments and surveys).
2. **Summative assessment** including (quizzes, class activities, semester work (one hour exam), practical exam, oral exams, and final written exams).

### b- Assessment schedule and weight

Assessment method	Assessment Timing (Week Number)	Marks/ Scores	Percentage of total course Marks
Semester work including one hour exam	7 <sup>th</sup> week	10	10%
Formative assessment	Throughout the semester	-----	-----
Practical exam	15 <sup>th</sup> week	30	30%
oral exam	End of semester	10	10%
Written exam	End of semester	50	50%
Assignments / Project /Portfolio/ Logbook	-----	-----	-----
Field training	-----	-----	-----
Other (Mention)	-----	-----	-----
Total		100	100%

## 7- Learning resources and supportive facilities:

<b>Learning resources</b>	<b>Main reference</b>	<b>Student handbook:</b> Department notes on Dairy products Edit by Staff members. Essential Laboratory of examination Dairy products, Fat & oil and egg. Edit by Staff members
	<b>Essential books (text books)</b>	<ul style="list-style-type: none"> <li>Robert, W., 2006: Microbiology and Technology of Fermented Foods. Blackwell publishing, USA.</li> <li>Snmahindru, 2009: Milk and Milk Products. Aph Publishing Corporation, Dehi.</li> </ul>
	<b>Recommended books</b>	<ul style="list-style-type: none"> <li>Course note.</li> <li>Tamime, AY. 2009: Milk Processing and Quality Management, First Edition, Wiley Blackwell publishing, UK.</li> </ul>
	<b>Periodicals, Web sites, . . etc</b>	<ul style="list-style-type: none"> <li>Journal of Dairy Science.</li> <li>Journal of Dairy technology.</li> <li>Benha veterinary medical journal</li> <li><a href="http://www.foodsci.uoguelph.ca/dairyedu/home.html">http://www.foodsci.uoguelph.ca/dairyedu/home.html</a></li> <li><a href="http://www.doitwithdairy.com/">http://www.doitwithdairy.com/</a></li> <li><a href="http://www.milkingredients.ca/DCP/index_e.asp">http://www.milkingredients.ca/DCP/index_e.asp</a></li> <li><a href="http://www.idf.org">www.idf.org</a></li> <li><a href="http://www.ekb.eg">www.ekb.eg</a></li> </ul>
	<b>Learning platform</b>	Thinqi
<b>Supportive facilities</b>	<b>Devices &amp; instruments</b>	<b>Devices:</b> <ul style="list-style-type: none"> <li>Autoclave</li> <li>Hot air oven</li> <li>Incubator</li> </ul>

		<ul style="list-style-type: none"> <li>• Water bath</li> <li>• Magnetic stirrer</li> <li>• Laminar air flow</li> <li>• Milk Butyrometer</li> <li>• Cheese Butyrometer</li> </ul> <p><b><u>Instruments</u></b></p> <ul style="list-style-type: none"> <li>• Petri dishes</li> <li>• Pipette</li> <li>• Cylinders &amp; Beakers</li> <li>• Porcelain dishes</li> <li>• Burettes</li> </ul>
		<p>1- Data show</p> <p>2- White board</p> <p>3- Food control laboratory</p> <p>4- Educational farm</p>

### **Matrices:**

#### **A- Content and ILOs matrix:**

Topic	A) Knowledge and understanding	B) Intellectual skills	C) Professional and practical skills	D) General and transferable skills
Introduction and overview of milk products	a1	-	-	-
Probiotics in dairy industry	a1	b1	c1,2,3,4	d1,2,3,4
Starter culture activity				
Cream, Butter and related butter	a1, a2	b1,2,3,4	c1,2,3,4,5,6,7	d1,2,3,4

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products (Technology & examination)				
Cheese varieties and technology	a1, a2	b1,2,3,4	c1,2,3,4,5,6,7	d1,2,3,4
Cheese defects, abnormalities and examination	a1, a2	b1,2,3,4	c1,2,3,4,5,6,7	d1,2,3,4
Fermented milks ; Functional fermented milk (Technology & examination)	a1, a2	b1, 4	c1,2,3,4,5,6,7	d1,2,3,4
Concentrated milk products (Technology & examination)	a1, a2	b1,2,3,4	c1,2,3,4	d1,2,3,4
Dried milk and infant milk (Technology & examination)	a1, a2	b1,2,3,4	c1,2,3	d1,2,3,4
Frozen desserts (Technology & examination)	a1	b1,2	c1,2,6,7	d1,2,3,4
Food poisoning and sanitation programs	a1, a2	b3,4	c1, 5,6,7	d1,2,3,4
Labeling and legalization	a1, a2	b4	c1,2, 7	d1,2,3,4
HACCP	a7	b2, b3	c3	d1,2,3,4
Edible fats and oils	a1, a2	b1,2,3	c1,2	d1,2,3,4
Egg and egg products	a1, a2	b1,2	c1,2,	d1,2,3,4

### B- Teaching and learning methods and ILOs matrix:

ILOs		Teaching and Learning methods						
		L	P&M	D	P	Ps	Bs	Fv
Knowledge and understanding	a1	√	√					
	a2	√	√				√	
Intellectual skills	b1	√	√			√		
	b2	√	√	√		√	√	
	b3	√	√	√		√	√	
	b4	√	√			√	√	
Attitudes and professional skills	c1		√		√	√		√

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	c2		√		√	√		√
	c3		√		√	√		√
	c4		√		√	√		√
	c5		√		√	√		√
	c6		√		√	√		√
	c7		√		√	√		√
General skills	d1	√	√	√	√	√	√	√
	d2	√	√	√		√		
	d3	√				√		
	d4	√				√		

**L: Lecture, P&M: Presentations & Movies, D&S: Discussions & Seminars P: Practical Ps: Problem solving, Bs: Brainstorming**

### C- Assessment methods and ILOs matrix:

ILOs		assessment method				
		Formative assessment	semester	Oral	Practical	Written
edge and understanding	a1	√	√	√		√
	a2	√	√	√		√
Intellectual skills	b1	√	√	√		√
	b2	√	√	√		√
	b3	√	√	√		√
	b4	√		√		√
Professional and practical skills	c1			√	√	
	c2			√	√	
	c3			√	√	
	c4			√	√	
	c5			√	√	
	c6			√	√	
	c7			√	√	
General skills	d1			√		
	d2			√		
	d3			√		
	d4			√		

**Course coordinator: Prof. Dr. Ekbal M. A. Ibrahim**

**Head of Department: Prof. Dr. Amany M. Salem**

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