Specification for Anesthesiology and diagnostic imaging course

2025/2026

1-Basic information

1.	**Course title**	Anesthesiology and diagnostic imaging							
2.	**Course code**	**SUR.427**							
3.	**Department offering the course**	Surgery anesthesiology and radiology							
3.	**Level**	4th year							
4.	**Semester**	Spring							
5.	**Number of units/credit hours**	**Theoretical**	**1**	**Practical**	**1(2)**	**Other**	**0**	**Total**	**2(3)**
6.	**Course Type**	√ **Obligatory** **Elective**							
7.	**Academic program**	Bachelor of Veterinary Medicine (BVM)							
8.	**University**	Benha University							
9.	**Faculty**	Veterinary medicine							
10.	**Name of course coordinator**	Prof. Dr. ADEL Badwy.							
11.	**Date of Approval**	Department council on 8/7/2025							
12.	**Date of Approval**	Faculty council on 27/8/2025							

2-Course overview

- **Course contents written in the program bylaw:**

preanesthetic; local regional and general anesthetics; diagnostic imaging; radiography , sonography and oilier techniques and Endoscopy**.**

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

	NARS ILOS		Course ILOS	
	Code	**Text**	**Code**	**Text**
Knowledge and understanding	**2.10**	Toxicology and forensic medicine, animal medicine, theriogenology and veterinary surgery.	**a1**	Identify the basic knowledge about surgical anatomy.
			a2	Mention the basis of local analgesia and its potentiation.
			a3	Understand the basis of regional analgesia and its adverse effects.
			a4	Familiarize of different types of premedication and the general anesthesia and its stages and different types of general anesthetic agent.

			a5	Identify the basis of radiology and ultrasonography and its applications
	2.11	The most appropriate diagnosis and differential diagnosis of animals, poultry and fish diseases	**a4**	Familiarize of different types of premedication and the general anesthesia and its stages and different types of general anesthetic agent.
			a5	Identify the basis of radiology and ultrasonography and its applications
	2.14	Basics of law and ethical codes relevant to animals and food hygiene.	**a1**	Identify the basic knowledge about surgical anatomy.
			a3	Understand the basis of regional analgesia and its adverse effects.
Intellectual skills	**4.1**	Foster critical thinking and scientific curiosity.	**b1**	Decide how to prepare the animal for local , regional or general anesthesia
	4.4	Proficiently secure diagnostic reasoning, develop problem lists and differential diagnosis in order to deductively and critically reach the most appropriate solution (s) and management of the addressed clinical problems	**b2**	Determine the appropriate method of anesthesia suitable to different techniques of operations and the animal species
			b3	Differentiate between the clinical signs of anesthesia and over dosage of anesthesia
			b4	Judge the more suitable time of anesthesia for interference in the different surgical conditions
			b5	Choose the suitable diagnostic methods to reach an accurate diagnosis
Professional and practical skills	**3.2**	Safely, correctly and humanely restrain animals for examination.	**c1**	Prepare of the animal for regional or general anesthesia .
	3.3	Obtain the history of the case whether it is of an individual animal or a group of animals		
	3.8	Skillfully and appropriately gain and use new information remain current with the emerging biomedical knowledge and therapeutic options	**c2**	Perform an accurate anesthetic method.
			c3	Practice the correctly positioned the needle in different types of regional analgesia.
			c4	Decide the suitable method of anesthesia.
	3.9	Conduct evidence-based problem-solving of field–presented problems tasks	**c5**	Prepare and interpret a radiographic and ultrasonographic image

	3.10	Provide emergency care to all species of animals	**c3**	Practice the correctly positioned the needle in different types of regional analgesia.
			c5	Prepare and interpret a radiographic and ultrasonographic image
General and transferable skills	**5.1**	Work under pressure and / or contradictory conditions	**d1**	Work under pressure during Anesthesiology and diagnostic imaging
	5.2	Function in a multidisciplinary team	**d2**	Work in a team during the Anesthesiology and diagnostic imaging
	5.3	Communicate appropriately verbally and nonverbally	**d3**	Communicate & Cooperate with other colleagues during Anesthesiology and diagnostic imaging
	5.5	Search for new information and technology as well as adopt life–long self-learning ethics	**d4**	Search for new information in the field of Anesthesiology and diagnostic imaging

4- Teaching and learning methods					
Lectures	√	**Discussion & seminar (Self-learning)**	√	**Practical**	√
Presentation & movies	√	**Problem solving**	√	**Brain storming**	√
Others	**Field training**				

- Course contents:

Week [W]	**Topics**	**Weekly hours**	**Expected number of the Learning Hours**			
			Theoretical teaching (lectures/discussion groups/ .....)	Training (Practical/Clinical/ .....)	Self-learning (Tasks/ Assignments/ Projects/ ...)	Other (to be determined)
W1	Basis and terminology	**2(3)**	**1**	**1(2)**		**0**
W2	Local analgesia	**2(3)**	**1**	**1(2)**		**0**
W3	Regional analgesia about the head	**2(3)**	**1**	**1(2)**		**0**
W4	Regional analgesia about the limb	**2(3)**	**1**	**1(2)**	Formative quiz (Self-learning)	**0**

W5	Paravertebral analgesia	**2(3)**	**1**	**1(2)**		**0**
W6	Epidural analgesia	**2(3)**	**1**	**1(2)**		**0**
W7	**Semester works (one hour exam)**					
W8	Narcosis	**2(3)**	**1**	**1(2)**	Formative quiz (Self-learning)	**0**
W9	Pre-medications	**2(3)**	**1**	**1(2)**	**0**	**0**
W10	General anesthesia	**2(3)**	**1**	**1(2)**	**0**	**0**
W11	Principles of diagnostic imaging	**2(3)**	**1**	**1(2)**	Formative quiz (Self-learning)	**0**
W12	Physics of x-ray	**2(3)**	**1**	**1(2)**		**0**
W13	Introduction to the radiographic interpretation	**2(3)**	**1**	**1(2)**		**0**
W14	Basis and clinical application of Ultrasonography	**2(3)**	**1**	**1(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
Semester works including one hour exam	7th week	10	10%
Assignments / Project /Portfolio/ Logbook	Throughout semester		
Field training			
Formative assessment	Throughout semester	-	-
Practical exam	15th week	30	30%
oral exam	End of semester	10	10%
Written exam	End of semester	50	50%
Total		100	100%

6- Learning resources and supportive facilities:

Learning resources	**Main reference**	**Student handbook**: A concise guide of Veterinary Anesthesiology Edit by Staff members.
	Essential books (text books)	• Teresa F. Sonsthagen (2011) Veterinary instruments and equipment: a pocket guide. • Pramod Kumar (2009) textbook of veterinary anaesthesia. • Lisa M. Lavin (2007) Radiography in Veterinary Technology • Amresh Kumar k.(2005) Veterinary Surgical Techniques
	Recommended books	• Course note. • Lisa M. Lavin (2007) Radiography in Veterinary Technology. • Kirby I. Bland (2002) the Practice of General Surgery
	Periodicals, Web sites, . . . etc	• Journal of Veterinary Surgery. • American Journal of Veterinary Medical Association. • American Journal of Veterinary Research • Veterinary Record • www.ekb.eg
	Learning platform	Thinqi
Supportive facilities	**Devices & instruments**	As listing in device guideline
		• Equipped teaching hall. • Equipped surgical laboratory. • Equipped surgery room. • Radiation unit • Faculty teaching farm • Faculty teaching hospital • Training unit

Matrices:

A- Content and ILOs matrix:

Topic	A) Knowledge and understanding	B) Intellectual skills	C) Professional and practical skills	D) General and transferable skills
Basis and terminology	**a1-a2**	**b1-b4**	**c1- c4**	**d1-d2-d3-d4**
Local analgesia	**a1-a2**	**b1-b4**	**c1- c4**	**d1-d2-d3-d4**
Regional analgesia about the head	**a1- a3**	**b1-b4**	**c1- c4**	**d1-d2-d3-d4**

Regional analgesia about the limb	**a1- a3**	**b1-b4**	**c1- c4**	**d1-d2-d3-d4**
Paravertebral analgesia	**a1- a3**	**b1-b4**	**c2-c3-c4- c5**	**d1-d2-d3-d4-**
Epidural analgesia	**a1- a3**	**b1-b4**	**c2-c3-c4- c5**	**d1-d2-d3-d4**
Narcosis	**a1- a4**	**b2- b4**	**c2-c3-c4 –c5**	**d1-d2-d3-d4**
Pre-medications	**a1- a4**	**b2- b4**	**c2-c3-c4**	**d1-d2-d3-d4**
General anesthesia	**a1- a4**	**b3- b4**	**c2-c3-c4**	**d1-d2-d3-d4**
Principles of diagnostic imaging	**a1- a5**	**b1-b5**	**c1-c5**	**d1-d2-d3-d4**
Physics of x-ray	**a1-a2**	**b1-b4**	**c1- c4**	**d1-d2-d3-d4**
Introduction to the radiographic interpretation	**a1-a2**	**b1-b4**	**c1- c4**	**d1-d2-d3-d4**
Basis and clinical application of Ultrasonography	**a1- a3**	**b1-b4**	**c1- c4**	**d1-d2-d3-d4**

B- Teaching and learning methods and ILOs matrix:

ILOs		**Teaching and Learning methods**						
		L	**P&M**	**D&s**	**P(TPL)**	**Ps**	**Bs**	**FTP**
Knowledge and understanding	**a1**	√	√	√			√	
	a2	√	√	√			√	
	a3	√	√	√			√	
	a4	√	√	√			√	
	a5	√	√	√			√	
Intellectual skills	**b1**	√	√	√		√	√	√
	b2	√	√	√		√	√	√
	b3	√	√	√		√	√	√
	b4	√	√	√		√	√	√
	b5	√	√	√		√	√	√
Professional and practical skills	**c1**		√	√	√	√		√
	c2		√	√	√	√		√
	c3		√	√	√	√		√
	c4		√	√	√	√		√
	c5		√	√	√	√		√
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**, FTP:** field trip, Training, Project

C- Assessment methods and ILOs matrix:

ILOs	**Assessment method**

		Formative assessment	Semester works (one hour exam)	oral	Practical	Written
Knowledge and understanding	a1	√	√	√		√
	a2	√	√	√		√
	a3	√	√	√		√
	a4	√	√	√		√
	a5	√	√	√		√
Intellectual skills	b1	√	√	√		√
	b2	√	√	√		√
	b3	√	√	√		√
	b4	√	√	√		√
	b5	√	√	√		√
Professional and practical skills	c1	√		√	√	
	c2	√		√	√	
	c3	√		√	√	
	c4	√		√	√	
	c5	√		√	√	
General skills	d1	√	√			
	d2	√	√			
	d3	√	√	√		
	d4	√	√			

Name and Signature
Course Coordinator

Prof. dr. Adel M Badawy

Name and Signature
Program Coordinator

Prof. Dr. Mahmoud Abouelroos