



Kafrelsheikh University
Faculty of Veterinary Medicine



Kafrelsheikh University

Faculty of Veterinary Medicine

Department of Biochemistry

Program Specification for Master Degree

(2021 - 2022)

Program Title:

Master of The Veterinary Science

(Clinical Biochemistry)



A- Administrative information:

- 1- **Awarding Body:** Kafrelsheikh University
- 2- **Teaching Body:** Faculty of Veterinary Medicine
- 3- **Department responsible:** Biochemistry
- 4- **Program Title:** **Clinical Biochemistry**
- 5- **Final award:** Diploma Degree
- 6- **Registration period:** one year
- 7- **Program Co- coordinator:** Prof. Dr.: khaled kahelo

B- Professional information:

1- Aim of the Program:

- Create new knowledge and understanding through the process of research & inquiry.
- Enable graduates to achieve competency in modern laboratory technology.
- Allow graduates to develop practical research project.
- A Good grade in Diploma can serve as a basis for admission to Master study in veterinary science in the field of Biochemistry.

2- Academic standards:

Academic reference standards (ARS) adopted by the faculty committee No 1(14/9/2014)

3-Graduate attributes:

At the end of the program, graduate must be able to:

- 1) Application of the gained specific knowledge in laboratory diagnosis of infectious and non-infectious diseases.
- 2) Identification of problems in diagnosis and suggestion of accurate methods to overcome such problems.
- 3) Mastering skills in clinical biochemistry, physiology, clinical pathology and clinical parasitology and using appropriate biotechnological means in the clinical laboratory diagnosis.
- 4) Effective communication skills in professional veterinary and laboratory practice and leading professional work team in clinical laboratory diagnosis.
- 5) Decision making according to available data collected from performing laboratory



investigations.

- 6) Effective use of the available resources to be quick, accurately and economically.
- 7) Awareness with his role in society development and community preservation through combating diseases.
- 8) Reflecting the commitment to act with integrity, credibility, and the rules of laboratory diagnosis of veterinary problems.
- 9) Realizing the importance of self and life-long learning and progress.

4-Programme outcomes [intended learning outcomes (ILOs)]

a. Knowledge and understanding:

On successful completion of this programme, graduate will be able to:

- a.1. Define basic principles and practice of biochemistry, molecular biology, and clinical pathology.
- a.2. Recognize the principles and practice of biochemistry of microorganisms, physiology of blood and body fluids and clinical parasitology.
- a.3. Identify the principles of laboratory safety (laboratory hazards and protective measures) and regulations.
- a.4. Apply efficiently the standards of quality standards in the clinical biochemistry laboratory.
- a.5. Confirm the influence of practicing laboratory diagnosis on surrounding environment and human and animal health

b. Intellectual skills:

At the end of the program, graduate must be able to:

- b.1. Analyze and judge laboratory diagnostic problems in clinical laboratory diagnosis and arranging them according to significance
- b.2. Solve diagnostic problems based on the laboratory findings
- b.3. Compare laboratory data with reference values and formulating diagnosis after excluding non-specific interpretation
- b.4. Assess risk for an item within clinical biochemistry laboratory
- b.5. Allocate appropriate intellectual strategy and evidence based decisions to deal with laboratory diagnostic problems and make decisions

c. Practical and professional skills:

At the end of the programme, graduate must be able to:



- c.1. Master the basic practical skills in clinical biochemistry, physiology, clinical pathology and parasitology
- c.2. Write professional laboratory reports
- c.3. Interpret data according to the normal reference values to achieve accurate diagnosis.

d. General and transferable skills:

At the end of the programme, graduate must be able to:

- d.1. Communicate efficiently with teaching staff, colleagues and the community
- d.2. Utilize information technology in scientific research and publications.
- d.3. Update information and knowledge and exchange it with staff and colleagues.
- d.4. Identify and use different sources of information and knowledge in clinical pathology and other related topics.
- d.5. Respect the importance of team work and do good control of time.
- d.6. Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team.
- d.7. Use the tools important for self and continuous learning.

5. Program structure

a. Program duration (years):

- Diploma of full calendar year from December to November.

b. Program courses:

course	Total hours	lecture hours per week	Practical hours per week
Basics of Biochemistry and Metabolism	192	2	2
Clinical Biochemistry	144	1	2
Biochemistry of nucleic acids and molecular biology	96	1	1
Biochemistry of micro-organisms	96	1	1
Physiology of blood and body fluids	96	1	1
Clinical Pathology and	96	2	1



parasitology			
Total	768	8	8

6-Teaching and Learning Methods:

The program features a variety of teaching approaches for different intended learning objectives, including lectures, practical and lab sessions and seminars.

7- Student assessment:

The program courses depends on different assessment ways:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills

Assessment of program intended learning outcomes

Tool or method	ILOs			
	K & U (a)	IS (b)	P.P (c)	G.T (d)
Written	1-5	1,2,4,5		
Oral	1-5	1,3,4		1-7
Practical		1,2,3	1-3	1-7

8-Marking scale as follow:-

Grade		Percentage
Excellent		> 90
Very good		>80
Good		>70
Pass		>60
Fail	weak	45 to less than 60
	very weak	Less than 45



9-Evaluation of program outcomes

Code	Evaluator	Tools	Sample
I	Postgraduate students	Questioners	20%
2	Stakeholder	Questioners & Open discussion	10
3	Alumni	Questioners	15
4	External examiners	Report	1
5	External evaluators	Report	1

10. Program Admission Requirements:

Applicant must normally satisfy the Faculty of Veterinary Medicine University of Kafrelsheikh general entrance and requirement.

- The applicant must have regular attendance in his courses according to the schedule of the faculty.

11. Regulations for progression of program

- a) Registration period for the Diploma in veterinary medicine sciences is one year after the approval date by the Faculty council, and it should not exceed a period of two years.
- b) The student should conduct the courses proposed by both department council and approved by postgraduate and research committee and faculty council (article 32) in regulation law list and the student will be entitled to apply for the exam. only after meeting attendance rate for each course.
- c) The student should pass written, practical and oral exams successfully in all courses, and the grade will be estimated according to the regulation law list.
- d) The Faculty council has the right to deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- e) Registration will be during September of each year.
- f) Failure in or depriving from entering one or more course does not require reexamination of successful passed courses.



12-Examination Regulations

- a- Time of written exam, 3 hours for each course that has 3 hours or more for lecture / practical /week. **If has less than 3 hours/week, the time of exam, is 2 hours only.**

The final degree of each course which has 3 hours (lecture and practical) per week is **100 and less than 3 hours is 50 degrees and divided into 50% for written exam, and 50% for practical and oral exam**

The program depends on different assessment ways. Course assessment is made of three elements, written, practical and oral exams. These summative assessment measures to extent student are able to demonstrate

Matching program ILOs with ARS - Matrix

Prog. ILOs	ARS																		
	K&U (a)				I.S. (b)					P.P. (c)		G.T. (d)							
	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7	
K&U	1,2	3	4	5															
I.S.					1	2	3	4	5										
P.P.										1	2,3								
G.T.												1	2	3	4	5	6	7	

Program Coordinator
Prof. dr. khaled kahelo

Head of department
Prof. dr. Samir Elshazly



ARS for Diploma in Clinical Biochemistry

1) Graduate attributes

At the end of the program, graduate must be able to::

- 10) Application of the gained specific knowledge in laboratory diagnosis of infectious and non-infectious diseases.
- 11) Identification of problems in diagnosis and suggestion of accurate methods to overcome such problems.
- 12) Mastering skills in clinical biochemistry, physiology, clinical pathology and clinical parasitology and using appropriate biotechnological means in the clinical laboratory diagnosis.
- 13) Effective communication skills in professional veterinary and laboratory practice and leading professional work team in clinical laboratory diagnosis.
- 14) Decision making according to available data collected from performing laboratory investigations.
- 15) Effective use of the available resources to be quick, accurately and economically.
- 16) Awareness with his role in society development and community preservation through combating diseases.
- 17) Reflecting the commitment to act with integrity, credibility, and the rules of laboratory diagnosis of veterinary problems.
- 18) Realizing the importance of self and life-long learning and progress.

A) Knowledge and understanding

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Basics principles and practice of Clinical biochemistry, Hematology, parasitology, and clinical pathology.	Basics, theories and specific knowledge in educational field and sciences related to professional practice
2)	Principles of laboratory safety and regulations	Ethical and legal principles related to professional practice
3)	Application of quality standards in the Clinical Biochemistry Laboratory	Basics and principles of quality assurance in professional practice in the field of specialization
4)	Influence of practicing laboratory diagnosis on surrounding environment and human and animal health	Impact of professional practice on environment and work to preserve and maintain the environment

B) Intellectual skills



	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Identification and analysis of laboratory diagnostic problems in clinical laboratory diagnosis and arranging them according to significance	Determination and analysis of professional problems in the field of specialization and arranging them according to priorities
2)	Solving diagnostic problems based on the laboratory data and evidence based diagnosis	Solving professional problems in specialization field
3)	Evaluating different laboratory data with normal and reference values and formulating diagnosis after excluding non-specific interpretation	Analytical reading of researches and scientific topics in the field of specialization
4)	Designing a Risk Assessment Form and performing a Risk Assessment for an item within clinical biochemistry laboratory	Risk assessment in professional practice.
5)	Using appropriate intellectual strategy and evidence based decisions to deal with laboratory diagnostic problems and make decisions	Professional decision making using available information

C) Professional and practical skills

	Adopted ARS	NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Performing the basic practical skills in clinical biochemistry, hematology, microbiology, clinical pathology and parasitology	Applying professional skills in the field of specialization
2)	Writing professional laboratory reports with interpretation of data according to the normal reference values	Writing professional reports

D) General and transferable skill

	Adopted ARS	NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Effective communication with teaching staff, colleagues and the community	Effective communication
2)	Utilizing information technology in scientific research and publications.	Utilizing information technology to serve development of professional



		practice.
3)	Updating information and knowledge and exchange it with staff and colleagues.	Self-assessment and determination of personal educational needs.
4)	Identifying and using different sources of information and knowledge in clinical pathology and other related topics	Using different resources to obtain knowledge and information.
5)	Respecting the importance of team work and do good control of time.	Working in team and efficient time management.
6)	Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team	Leading a team in familiar professional contexts.
7)	Using the tools important for self and continuous learning	Self and continuous learning

أولاً: برامج دبلومه الدراسات العليا

١- مواصفات الخريج

خريج برنامج دبلومه الدراسات العليا في أي تخصص يجب أن يكون قادراً على:

١. تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
٢. تحديد المشكلات المهنية واقتراح حلولاً لها
٣. إتقان المهارات المهنية واستخدام الوسائل التكنولوجية المناسبة في ممارسته المهنية
٤. التواصل وقيادة فرق العمل من خلال العمل المهني المنظمي
٥. اتخاذ القرار في ضوء المعلومات المتاحة
٦. توظيف الموارد المتاحة بكفاءة
٧. الوعي بدوره في تنمية المجتمع والحفاظ على البيئة
٨. التصرف بما يعكس الالتزام بالنزاهة والمصداقية وقواعد المهنة وتقبل المسائلة والمحاسبة
٩. إدراك ضرورة تنمية ذاته والانخراط في التعلم المستمر

٢- المعايير القياسية العامة

١ المعرفة والفهم.

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على فهم و

استيعاب كل من:

- أ- النظريات والأساسيات والمعارف المتخصصة في مجال التعلم وكذا العلوم ذات العلاقة بممارسته المهنية
 - ب- المبادئ الأخلاقية والقانونية للممارسة المهنية في مجال التخصص
 - ج- مبادئ وأساسيات الجودة في الممارسة المهنية في مجال التخصص
 - د- تأثير ممارسة المهنة على البيئة والعمل على الحفاظ على البيئة وصيانتها
- #### ٢ المهارات الذهنية.

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على:

أ- تحديد وتحليل المشاكل في مجال التخصص وترتيبها وفقاً لأولوياتها

ب- حل المشاكل المتخصصة في مجال مهنته

ج- القراءة التحليلية للأبحاث والمواضيع ذات العلاقة بالتخصص

د- تقييم المخاطر في الممارسات المهنية

هـ- اتخاذ القرارات المهنية في ضوء المعلومات المتاحة

٣ المهارات المهنية.



- بانتهاؤ دراسته برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
- أ- تطبيق المهارات المهنية في مجال التخصص
 - ب- كتابة التقارير المهنية
 - د المهارات العامة و المنتقلة.
- بانتهاؤ دراسته برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
- أ- التواصل الفعال بأنواعه المختلفة
 - ب- استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية
 - ج- التقييم الذاتي و تحديد احتياجاته التعلميه الشخصية
 - د- استخدام المصادر المختلفة للحصول على المعلومات و المعارف
 - هـ- العمل في فريق وإدارة الوقت
 - و- قيادة فريق في سياقات مهنية مألوفة
 - ز- التعلم الذاتي و المستمر



COURSE SPECIFICATION (2021 / 2022)

1 - Basic Information:

Code number:.....

Course title: **Principles of Biochemistry and Metabolism**

Academic Year: **Diploma of Clinical Biochemistry program**

Total teaching hours: 144 h

Lectures: 96 hrs (48 weeks- 2hrs/week)

Practical: 48 hrs (48 weeks- 1hrs/week)

2 - OVERALL AIMS OF THE COURSE:

By the end of this course, the student should acquire the concepts, principles and skills related to the structure of macromolecules and their biochemical approach to cellular function. Topics will include biochemistry of the carbohydrate, lipid, protein, hormones, enzymes and coenzymes and Vitamins. Also, biochemical structure of different, cellular membranes and cell organelles, apoptosis mineral metabolism chemistry of putrefaction and detoxication will be addressed.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- a1 Define carbohydrates, lipids and proteins and list their classification.
- a2: State hormone structure and nature as well as specify mode of action of each hormone
- a3: Explain Biochemical structure of different tissues and mechanism of apoptosis
- a4: describe the metabolism of vitamins and Co-enzymes.
- a5: Discuss biochemical aspects of membrane receptors and signal transduction.
- a6: Recognize metabolism of minerals
- a7. Describe and understand the structure of enzymes, their properties and mechanism of action

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- b1: Formulate the most important chemical structure to be used in biochemistry
- b2: Analyze the chemical and physical properties of carbohydrate, lipids and protein
- b3: Compare different clinical cases to differentiate between each abnormalities affecting the body.
- b4. Describe the different factors that affect the rate of enzyme activity.
- b4: Interpret the collecting data with professionalism and adequate decision making.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- c1: Evaluate different physical and chemical for identification of macromolecules.
- c2 Utilize chemical properties of hormones to identify their different types
- c3 demonstrate mechanism of apoptosis.
- c4 Master the methods for hormone assays
- c5: Utilize different laboratory techniques

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- d.1. Communicate effectively with his professors, and collages.
- d.2. Utilize different sources of knowledge and information
- d.3. Use information technology to serve the professional practice.



d.4. Manage time efficiently.

4 - COURSE CONTENTS:

Topic	No. of hours		
	Lectures	Practical	Total
1. Macromolecule chemistry	30	18	48
2. Hormones	14	6	20
3. Vitamins chemistry	10	2	12
4. Chemistry of enzymes and coenzymes	6	10	16
5. Chemistry of putrefaction and detoxication	6	4	10
6. Biochemical structure of different tissues	8	4	12
7. Biochemical aspects of membrane and their receptors.	8	4	12
8. Apoptosis	4	2	6
9. Mineral metabolism	10	-	10
Total	96	48	144

5- TEACHING & LEARNING METHODS:

* **Advanced lectures:** PowerPoint presentations including videos, and whiteboard
Discussion and brain storming

* **Practical sessions:**

* **Self-Learning activities:** Mini reviews from the web and the library

Making individual reports about poultry or dairy operations

* **Distance Teaching and Learning:** Using the Microsoft Teams platform, when necessary, such as during COVID-19 pandemics or when onsite (face-to-face) education is halted due to weather emergencies or other reasons. Distance teaching may be offered synchronous or non-synchronous.

Teaching and Learning Methods	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Advanced lectures *	a1 to a7	b1 to b5		d1, d4
Practical sessions		b1 to b5	c1 to c5	d2, d4
Self-Learning activities				d2, d3, d4
Distance Teaching and Learning	a1 to a7	b1 to b5	c1 to c5	d1 to d4

*Lectures and some practical topics may be offered face to face or via distance teaching and learning.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-

*Activation of office hours.

*Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination	Activities
7.b time	At the end of the academic year	At the end of the academic year	At the end of the academic year	Allover the academic year
7.c grads	50	20	20	10



6.1. Methods	7. Student Assessment			
	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Written exams	a1 to a5	b1 to b4		d4
Practical exams			c1 to c5	d2, d3
Oral exams	a1 to a5	b1 to b4		d1
Student activities	a1, a5,			d1 to d4

KU, knowledge and understanding; IS, intellectual skills; PPS, practical and professional skills; GTS, general and transferable skills.

8. LEARNING AND REFERENCE MATERIALS:

8-1: Essential Books

- Nelson, David L., and Michael M. Cox. 2017. Lehninger Principles of Biochemistry. 7th ed. New York, NY: W.H. Freeman.
- Murray, R.K., Granner, D.K, Mayes, P.A. and Rodwell, V.W. (2006) Harper's Biochemistry. 27th Edition, McGraw-Hill, Health Profession Division, New York, 225.
- Ferrier, Denise R. (2017). Lippincott Illustrated Reviews: Biochemistry (7th edition). Philadelphia, PA: Wolters Kluwer Health.
- VOET, D., & VOET, J. G. (2011). Biochemistry. Hoboken, NJ, John Wiley & Sons.
- Voet, D., Voet, J. G., & Pratt, C. W. (2016). Fundamentals of biochemistry (5th ed.). John Wiley & Sons.
- Berg, J. M., Tymoczko, J. L. and Stryer, L. Biochemistry. Freeman, 7th edition, 2011
- Lodish, H., Berk, A., Zipursky, S. L., Matsudaira, P., Baltimore, D. and James Darnell, J. Molecular Cell Biology , Freeman, 7th edition 2013
- Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K. and Walter P. Molecular Biology of the Cell. Garland Science, 6th edition 2014
- Mathews, C. K. & Van Holde, K. E. & Ahern, K. G. Biochemistry. Addison Wesley, 4th edition, 2012. (
- Voet, D. & Voet, J. G. Biochemistry. 4th edition, 2013.
- Voet, D., Voet, J. G. & Pratt, C. W. Principles of Biochemistry. Wiley, 4th edition, 2013.

8-2: Recmended books:

Burtis, Ashwood and bruns (2006) clinical chemistry and molecular diagnostics 4th ed., USA, Elseveir.

8.2d Kaneko, Harvey and Bruss (2008) Clinical Biochemistry of Domestic Animals, 6th ed. Elsevir Inc.

Devlin, Thomas M. 2011. Textbook of biochemistry: with clinical correlations. Hoboken, NJ: John Wiley & Sons.

James H. Nichols, Carol A. Rauch, Michael Laposata 2013 Clinical Chemistry Quality in Laboratory Diagnosis (Kindle Edition)

8-3: Egyptian Knowledge Bank:

- Michael M, Srivastava R and Deans K (2019): Clinical Biochemistry: An Illustrated Colour Text, 6th Edition, Elsevier Ltd.
- Baynes J and Dominiczak M (2019): Medical Biochemistry, 5th Edition, Elsevier Ltd



- Koel M and Kaljurand M (2019): Green Analytical Chemistry: Edition 2, Royal Society of Chemistry.
- McPherson RA and Pincus MR (2017): Henry's Clinical Diagnosis and Management by Laboratory Methods, 23rd Edition, Elsevier Ltd.
- Donald V and Judith G (2011): Biochemistry, 4th Edition, Publisher: Wiley.

Scientific Journals

- International Journal of Biochemistry and Biophysics
- International Journal of Biochemistry and Molecular Biology
- International Journal of Biochemistry, Biophysics & Molecular Biology
- International Journal of Biological and Chemical Sciences
- Biochemistry
- Journal of molecular biochemistry

Scientific websites

- The Egyptian Knowledge Bank: <https://www.ekb.eg/web/guest/home>
- American Society for Biochemistry and Molecular Biology (ASBMB) <https://www.ascb.org/>
- American Society for Cell Biology (ASCB) <https://www.asbmb.org/>
- Biochemical Society (BS)
- <https://www.biochemistry.org/>

Course Coordinator

Head of Department

Dr. Tarek kamal Abuzaid

Prof. Dr. Samir Ahmed Elshazly



Course Matrix for achievement of Intended Learning Outcomes

Topics	Hours	Knowledge & Understanding							Intellectual Skills				Practical & Professional Skills					General & Transferable Skills						
		1	2	3	4	5	6	7	1	2	3	4	1	2	3	4	5	1	2	3	4			
1. Macromolecule chemistry	48	✓							✓	✓			✓				✓	✓	✓	✓	✓	✓	✓	✓
2. Hormones	20		✓						✓					✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
3. Vitamins chemistry	12				✓				✓			✓					✓	✓	✓	✓	✓	✓	✓	✓
4. Chemistry of enzymes and coenzymes	16				✓			✓									✓	✓	✓	✓	✓	✓	✓	✓
5. Chemistry of putrefaction and detoxication	10											✓					✓	✓	✓	✓	✓	✓	✓	✓
6. Biochemical structure of different tissues	12			✓													✓	✓	✓	✓	✓	✓	✓	✓
7. Biochemical aspects of membrane and their receptors.	12					✓						✓					✓	✓	✓	✓	✓	✓	✓	✓
8. Apoptosis	6			✓							✓				✓		✓	✓	✓	✓	✓	✓	✓	✓
9. Mineral metabolism	10						✓										✓	✓	✓	✓	✓	✓	✓	✓



COURSE SPECIFICATION (2021 / 2022)

1 - Basic Information:

Code number:.....

Course title: Nucleic acids biochemistry and molecular biology

Academic Year: **Diploma of Clinical Biochemistry Program**

Total teaching hours: **96 h**

Lectures: **48 hrs (48 weeks- 1hr/week)**

Practical: **48 hrs (48 weeks- 1hr/week)**

2 - OVERALL AIMS OF THE COURSE:

By the end of this course, the student should acquire the concepts, principles and skills related to structure function of nucleic acids. Mechanisms underlying the of DNA replication, repair, transcription, and translation in both prokaryotic and eukaryotes. Studying regulation of gene expression at all levels. In addition, related molecular biology techniques will be performed and discussed including cloning, restriction enzymes, sequencing and hybridization techniques.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- a.1. Define molecular biology and differentiate between DNA and RNA structurally and functionally
- a.2. Recognizing DNA organization in chromosomes and DNA replication, transcription and translation
- a.3. Describe gene expression regulation process.
- a.4. Recognize types of restriction enzymes.
- a.5. Identifying polymerase Chain Reaction (PCR) and DNA sequencing for normal and muted genes
- a.6. Summarize cloning process

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- b.1. Explain instructions and operate DNA related equipment.
- b.2. apply appropriate databases and computer-based tools to the study of cell biology
- b.3. Understanding of the role of regulation of the cell cycle in normal state
- b.4. Use statistical methods to analyze genetic data.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- c.1. Prepare lab solutions and reagent for molecular biology experiments
- c.2. Perform DNA and RNA isolation using the most modern techniques.
- c.3. Use gel electrophoresis to visualize the separation of DNA, RNA and protein
- c.4 Perform Reverse transcriptase polymerase chain reaction to perform gene expression
- c.5. Manage and interpret molecular biology data using computer programs

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- d.1. Communicate effectively with his professors, and colleagues.
- d.2. Utilize different sources of knowledge and information



d.3. Use information technology to serve the professional practice.

d.4. Manage time efficiently.

4 - COURSE CONTENTS:

Topic	No. of hours		
	Lectures	Practical	Total
1. Nucleic acids structures	6	4	10
2. Replication, transcription and translation processes	10	6	16
3. Regulation of gene expression	4	2	6
4. Restriction enzymes	4	6	10
5. Cloning process	4	6	10
6. Techniques in molecular biology	12	16	28
7. mutations	2	2	4
8. Diagnostic application of nucleic acids	6	6	12
Total	48	48	96

5- TEACHING & LEARNING METHODS:

* **Advanced lectures:** PowerPoint presentations including videos, and whiteboard

Discussion and brain storming

* **Practical sessions:**

* **Self-Learning activities:** Mini reviews from the web and the library

Making individual reports about poultry or dairy operations

* **Distance Teaching and Learning:** Using the Microsoft Teams platform, when necessary, such as during COVID-19 pandemics or when onsite (face-to-face) education is halted due to weather emergencies or other reasons. Distance teaching may be offered synchronous or non-synchronous.

Teaching and Learning Methods	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Advanced lectures*	a1 to a6	b1 to b4		d1, d4
Practical sessions		b1 to b4	c1 to c5	d2, d4
Self-Learning activities				d2, d3, d4
Distance Teaching and Learning	a1 to a6	b1 to b4	c1 to c5	d1 to d4

*Lectures and some practical topics may be offered face to face or via distance teaching and learning.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-

*Activation of office hours.

*Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination	Activities
7.b time	At the end of the academic year	At the end of the academic year	At the end of the academic year	All over the academic year



7.c grads	25	10	10	5
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6.1. Methods	7. Student Assessment			
	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Written exams	a1 to a6	b1 to b4		d4
Practical exams			c1 to c5	d2, d3
Oral exams	a1 to a6	b1 to b4		d1
Student activities	a1, a6			d1 to d4

KU, knowledge and understanding; IS, intellectual skills; PPS, practical and professional skills; GTS, general and transferable skills.

8. LEARNING AND REFERENCE MATERIALS:

8-1: Essential Books

- Akam, M, et al 1994, The evolution of Developmental Mechanisms, The Company of Biologists, Cambridge.
- Alberts, B, et al 2008, Molecular Biology of the Cell, 5th edn, Garland Publishing Inc, New York.
- Attwood, TK & Parry-Smith, DJ 1999, Introduction to Bioinformatic, Addison Wesley Longman Ltd, Harlow.
- Brown, TA 1991, Molecular Biology Labfax, BIOS Scientific Publications, Oxford.
- Brown, TA 2000, Essential Molecular Biology: A Practical Approach, 2nd edn, IRL Press, Oxford.
- Cassimeris, L, Lingappa, VR & Plopper, G & Vishwanath R 2010, Lewin's Cells, 2nd edn, Jones & Bartlett.
- Karp, G 2008, Cell and molecular biology, 5th edn, Wiley, New York.
- Karp, G 2013, Cell and Molecular Biology: Concepts and Experiments, 7th edn, John Wiley, New York.
- Lewin, B, Cassimeris, L, Lingappa, VR & Plopper, G 2011, Cells, 2nd edn, Jones & Bartlett.
- Lodish, H, et al 1995, Molecular Cell Biology, 3rd edn, Scientific American Books, New York.
- Mount, DW 2004, Bioinformatics: Sequence and Genome Analysis, 2nd edn, Cold Spring Harbour Laboratory Press, Cold Spring Harbour.
- Nelson, DL & Cox, MM 2012, Lehninger principles of biochemistry, 6th edn, WH Freeman, New York.
- Nicholl, DST 2002, An Introduction to Genetic Engineering, Cambridge University Press, Cambridge.
- Sambrook, J, Fritsch, EF & Maniatis, T 1989, Molecular Cloning: a laboratory manual, Cold Spring Harbour Laboratory Press, Cold Spring Harbour.
- Voet, D & Voet, JG & Pratt CW 2012, Fundamentals of Biochemistry, 4th edn, John Wiley and Sons, New York.

8-2: Recmended books:

- Weaver, RF 2002, Molecular Biology, 2nd edn, McGraw Hill, Boston
- Allison, L. A. (2008): Fundamental Molecular Biology. 2nd edition, Wiley-Blackwell Ltd.; Malden, MA, USA.
- Watson JD, Hopkins NH, Roberts JW et al. (1987) Molecular Biology of the Gene, 4th edn. Menlo Park, CA: Benjamin-Cummings.
- Carroll SB, Grenier JK & Weatherbee SD (2001) From DNA to Diversity: Molecular Genetics and the Evolution of Animal Design. Malden, MA: Blackwell Science.

Scientific Journals

- Journal of Molecular Biology
- Journal of Biology



- Molecular and Cellular Biology
- Molecular Biology and Evolution
- Nature Reviews Molecular Cell Biology

Cellular and Molecular Life Sciences

Scientific websites

- The Egyptian Knowledge Bank: <https://www.ekb.eg/web/guest/home>
<https://towson.libguides.com/mbio/websites>
<http://mbcf.dfc.harvard.edu/cmsmbr/>
<http://www.ncbi.nlm.nih.gov/BLAST/>
<http://www.ncbi.nlm.nih.gov/sites/entrez?db=genome>
<https://www.loc.gov/rr/scitech/selected-internet/molecular.html>

Course Coordinator

Head of Department

Dr. Nasr Elsayed NAsr

Prof. Dr. Samir Ahmed Elshazly

Course Matrix for achievement of Intended Learning Outcomes

Topics	Hours	Knowledge & Understanding						Intellectual Skills				Practical & Professional Skills					General & Transferable Skills				
		1	2	3	4	5	6	1	2	3	4	1	2	3	4	5	1	2	3	4	
1. Nucleic acids structures	10	✓						✓						✓				✓	✓	✓	✓
2. Replication, transcription and translation processes	16	✓	✓															✓	✓	✓	✓
3. Regulation of gene expression	6			✓						✓						✓	✓	✓	✓	✓	
4. Restriction enzymes	10				✓						✓					✓	✓	✓	✓	✓	
5. Cloning process	10						✓		✓			✓			✓	✓	✓	✓	✓	✓	
6. Techniques in molecular biology	28					✓			✓			✓		✓	✓		✓	✓	✓	✓	
7. mutations	4					✓			✓		✓					✓	✓	✓	✓	✓	
8. Diagnostic application of nucleic acids	12					✓			✓		✓	✓		✓			✓	✓	✓	✓	



COURSE SPECIFICATION (2021 / 2022)

1 - Basic Information:

Code number:.....

Course title: Microbial Biochemistry

Academic Year: **Diploma of Clinical Biochemistry Program**

Total teaching hours: 96 h

Lectures: 48 hrs (48 weeks- 1hr/week)

Practical: 48 hrs (48 weeks- 1hr/week)

2 - OVERALL AIMS OF THE COURSE:

By the end of this course, the student should acquire the concepts, principles and skills related to key metabolic biochemistry concepts. The topics covered include important metabolic pathways. It provides understanding the biochemical basis of human growth, metabolism and disease and acquire the biochemical background required for successful progression in the basic biomedical and clinical sciences. Moreover, the biochemical basis of metabolism including the biosynthesis and breakdown of lipids, amino acids, nucleic acids, eicosanoids, some important special products derived from amino acids will be addressed

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- a.1. understand the main principles of metabolic biochemistry concepts
- a.2. Memorize different reactions of carbohydrates, fats and protein metabolism
- a.3. distinguish the difference between aerobic and anaerobic oxidation
- a.4. Describe electron transport chain and energy generating metabolism
- a.5. recognize the anabolism and catabolism and nitrogen balance.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- b.1. Understand the importance of carbohydrates, proteins and lipid function and its role in metabolism
- b.2. Draw the metabolic pathways of carbohydrates, proteins and lipid
- b.3. To recognize the difference between energy production from lipid and carbohydrate
- b.4. Conclude the change in metabolic processes in prokaryotes
- b.5. Recognize rate-regulatory steps in biochemical metabolic pathways.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- c1 Use spectrophotometer for measuring of every biochemical parameters to assess the clinical condition of the diseased patient
- c2: Perform different laboratory tests to determine the metabolic disorders
- c3: Handle properly chemicals in the lab and be aware of the rules of good laboratory practice

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- d.1. Communicate effectively with his professors, and colleagues.



- d.2. Utilize different sources of knowledge and information
- d.3. Use information technology to serve the professional practice.
- d.4. Manage time efficiently.

4 - COURSE CONTENTS:

Topic	No. of hours		
	Lectures	Practical	Total
1- Metabolism of carbohydrate & their metabolic disorders	10	14	24
2- Metabolism of Lipids & their metabolic disorders	10	14	24
3- Metabolism of Protein & their metabolic disorders	10	12	22
4- Biological oxidation and energy generating metabolism	10	4	14
5- ATP synthesis in prokaryotes	8	2	10
Total	48	48	96

5- TEACHING & LEARNING METHODS:

- * **Advanced lectures:** PowerPoint presentations including videos, and whiteboard Discussion and brain storming
- * **Practical sessions:**
- * **Self-Learning activities:** Mini reviews from the web and the library
Making individual reports about poultry or dairy operations
- * **Distance Teaching and Learning:** Using the Microsoft Teams platform, when necessary, such as during COVID-19 pandemics or when onsite (face-to-face) education is halted due to weather emergencies or other reasons. Distance teaching may be offered synchronous or non-synchronous.

Teaching and Learning Methods	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Advanced lectures *	a1 to a5	b1 to b5		d1, d4
Practical sessions		b1 to b5	c1 to c3	d2, d4
Self-Learning activities				d2, d3, d4
Distance Teaching and Learning	a1 to a5	b1 to b5	c1 to c3	d1 to d4

*Lectures and some practical topics may be offered face to face or via distance teaching and learning.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
- *Activation of office hours.
- *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination	Activities
7.b time	At the end of the academic year	At the end of the academic year	At the end of the academic year	Allover the academic year
7.c grads	50	20	20	10



6.1. Methods	7. Student Assessment			
	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Written exams	a1 to a5	b1 to b4		d4
Practical exams			c1 to c3	d2, d3
Oral exams	a1 to a5	b1 to b5		d1
Student activities	a1, a5			d1 to d4

KU, knowledge and understanding; IS, intellectual skills; PPS, practical and professional skills; GTS, general and transferable skills.

8-1: Essential Books

- Nelson, David L., and Michael M. Cox. 2017. Lehninger Principles of Biochemistry. 7th ed. New York, NY: W.H. Freeman.
- Murray, R.K., Granner, D.K, Mayes, P.A. and Rodwell, V.W. (2006) Harper's Biochemistry. 27th Edition, McGraw-Hill, Health Profession Division, New York, 225.
- Ferrier, Denise R. (2017). Lippincott Illustrated Reviews: Biochemistry (7th edition). Philadelphia, PA: Wolters Kluwer Health.
- VOET, D., & VOET, J. G. (2011). Biochemistry. Hoboken, NJ, John Wiley & Sons.
- Voet, D., Voet, J. G., & Pratt, C. W. (2016). Fundamentals of biochemistry (5th ed.). John Wiley & Sons.
- Berg, J. M., Tymoczko, J. L. and Stryer, L. Biochemistry. Freeman, 7th edition, 2011
- Lodish, H., Berk, A., Zipursky, S. L., Matsudaira, P., Baltimore, D. and James Darnell, J. Molecular Cell Biology , Freeman, 7th edition 2013
- Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K. and Walter P. Molecular Biology of the Cell. Garland Science, 6th edition 2014
- Mathews, C. K. & Van Holde, K. E. & Ahern, K. G. Biochemistry. Addison Wesley, 4th edition, 2012. (
- Voet, D. & Voet, J. G. Biochemistry. 4th edition, 2013.
- Voet, D., Voet, J. G. & Pratt, C. W. Principles of Biochemistry. Wiley, 4th edition, 2013.

8-2: Recmonded books:

- Burtis, Ashwood and bruns (2006) clinical chemistry and molecular diagnostics 4th ed., USA, Elseveir.
- 8.2d Kaneko, Harvey and Bruss (2008) Clinical Biochemistry of Domestic Animals, 6th ed. Elsevir Inc.
- Devlin, Thomas M. 2011. Textbook of biochemistry: with clinical correlations. Hoboken, NJ: John Wiley & Sons.
- James H. Nichols, Carol A. Rauch, Michael Laposata 2013 Clinical Chemistry Quality in Laboratory Diagnosis (Kindle Edition)
- Harper's Biochemistry, Harper's illustrated Biochemistry 2012, Robert K. Murray, Daryl K. Granner, Peter A. Mayes, and Victor W. Radwel. Publisher: Appelton & Lange.

8-3: Egyptian Knowledge Bank:

- Michael M, Srivastava R and Deans K (2019): Clinical Biochemistry: An Illustrated Colour Text, 6th Edition, Elsevier Ltd.
- Baynes J and Dominiczak M (2019): Medical Biochemistry, 5th Edition, Elsevier Ltd



- Koel M and Kaljurand M (2019): Green Analytical Chemistry: Edition 2, Royal Society of Chemistry.
- McPherson RA and Pincus MR (2017): Henry's Clinical Diagnosis and Management by Laboratory Methods, 23rd Edition, Elsevier Ltd.
- Donald V and Judith G (2011): Biochemistry, 4th Edition, Publisher: Wiley.

Scientific Journals

- International Journal of Biochemistry and Biophysics
- International Journal of Biochemistry and Molecular Biology
- International Journal of Biochemistry, Biophysics & Molecular Biology
- International Journal of Biological and Chemical Sciences
- Biochemistry
- Journal of molecular biochemistry
- Biochemical Journal
-

Scientific websites

- The Egyptian Knowledge Bank: <https://www.ekb.eg/web/guest/home>
- American Society for Biochemistry and Molecular Biology (ASBMB) <https://www.ascb.org/>
- American Society for Cell Biology (ASCB) <https://www.asbmb.org/>
- Biochemical Society (BS)
- <https://www.biochemistry.org/>
- www.PubMed.com
- <http://pdfdatabase.com/index.php?q=medical+biochemistry+lectur>
- <http://www.biosolutions.info/search/label/biochemistry>
- <http://themedicalbiochemistrypage.org/>

Course Coordinator

Head of Department

Dr. Tarek kamal Abuzaid

Prof. Dr. Samir Ahmed Elshazly

Course Matrix for achievement of Intended Learning Outcomes

Topics	Hours	Knowledge & Understanding					Intellectual Skills					Practical & Professional Skills			General & Transferable Skills						
		1	2	3	4	5	1	2	3	4	5	1	2	3	1	2	3	4			
1- Metabolism of carbohydrate & their metabolic disorders	24	✓	✓				✓	✓	✓		✓	✓	✓					✓	✓	✓	✓
2- Metabolism of Lipids & their metabolic disorders	24	✓	✓				✓	✓	✓		✓	✓	✓					✓	✓	✓	✓
3- Metabolism of Protein & their metabolic disorders	22	✓	✓				✓	✓			✓	✓	✓					✓	✓	✓	✓
4- Biological oxidation and energy generating metabolism	14					✓							✓					✓	✓	✓	✓
5- ATP synthesis in prokaryotes	10					✓				✓								✓	✓	✓	✓



COURSE SPECIFICATION (2021 / 2022)

1 - Basic Information:

Code number:.....

Course title: Clinical Biochemistry

Academic Year: **Diploma of Clinical Biochemistry Program**

Total teaching hours: 144 h

Lectures: 48 hrs (48 weeks- 1hrs/week)

Practical: 96 hrs (48 weeks- 2hrs/week)

2 - OVERALL AIMS OF THE COURSE:

By the end of this course, the student should acquire the concepts, principles and skills related to tests routinely carried out in a clinical biochemistry laboratory and are able to appropriate tests routinely carried out in a clinical biochemistry laboratory and be able to appropriate interpretation of the obtained results. The considered subjects are clinical enzymology, clinical endocrinology, liver functions, kidney functions, pancreatic and myocardial functions tests, tumor markers and principles of immunoassays and inflammatory process.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- a1: Recognize enzymes with clinical significance
- a2: Define metabolic disorders of carbohydrates
- a3: Describe liver, Kidney and myocardial function tests.
- a4: Specify Biochemical aspects blood gases, pH, electrolytes and acidbase balance
- a5: Explain metabolic disorders of hormones
- a6: List tumor and inflammatory markers
- a7: Identify methods of plasma protein separation

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- b1-Interpret biochemical laboratory findings of some metabolic disorders.
- b2-Relate the abnormalities in body function tests.
- b3: Analyse the collecting data with professionalism and adequate decision making.
- b4: Conclude the clinical significance of determination of different biochemical parameters and formulate a crosslink between them

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- c1: identify the different biochemical tests to determine the concentration serum components.
- c2: Perform laboratory test to estimate liver and kidney function tests.
- c3: Carryout the different laboratory tests to measure enzyme activity either kinetic or end point
- c4: Utilize the commercial kits or dipsticks in plasma or urine analysis.
- c5: Use gel electrophoresis and immune assays techniques in diagnosis of metabolic disorders

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:



- d.1. Communicate effectively with his professors, and collages.
- d.2. Utilize different sources of knowledge and information
- d.3. Use information technology to serve the professional practice.
- d.4. Manage time efficiently.

4 - COURSE CONTENTS:

Topic	No. of hours		
	Lectures	Practical	Total
1. Clinical Enzymology	6	10	16
2. Clinical endocrinology	4	6	10
3. Liver function tests.	6	12	18
4. Kidney function tests and urine analysis	6	12	18
5. Pancreatic functions	4	12	16
6. Metabolic dis orders of hormones	4	6	10
7. Myocardial function tests	2	6	8
8. Tumor markers	4	6	10
9. Blood gases, pH, electrolytes and acidbase balance	2	4	6
10. Methods of plasma protein separation	4	8	12
11. Inflammation and immunity	4	10	14
Total	48	96	144

5- TEACHING & LEARNING METHODS:

* **Advanced lectures:** PowerPoint presentations including videos, and whiteboard
Discussion and brain storming

* **Practical sessions:**

* **Self-Learning activities:** Mini reviews from the web and the library

Making individual reports about advance laboratory diagnosis of metabolic disorders.

* **Distance Teaching and Learning:** Using the Microsoft Teams platform, when necessary, such as during COVID-19 pandemics or when onsite (face-to-face) education is halted due to weather emergencies or other reasons. Distance teaching may be offered synchronous or non-synchronous.

Teaching and Learning Methods	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Advanced lectures*	a1 to a7	b1 to b4		d1, d4
Practical sessions		b1 to b4	c1 to c5	d2, d4
Self-Learning activities				d2, d3, d4
Distance Teaching and Learning	a1 to a7	b1 to b4	c1 to c5	d1 to d4

*Lectures and some practical topics may be offered face to face or via distance teaching and learning.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-

*Activation of office hours.

*Discussion with them during practical session.



7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination	Activities
7.b time	At the end of the academic year	At the end of the academic year	At the end of the academic year	Allover the academic year
7.c grads	25	10	10	5

6.1. Methods	7. Student Assessment			
	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Written exams	a1 to a7	b1 to b4		d4
Practical exams			c1 to c5	d2, d3
Oral exams	a1 to a7	b1 to b4		d1
Student activities	a1, a3, a7			d1 to d4

KU, knowledge and understanding; IS, intellectual skills; PPS, practical and professional skills; GTS, general and transferable skills.

8. LEARNING AND REFERENCE MATERIALS:

8-1: Essential Books

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- Ferrier, Denise R. (2017). Lippincott Illustrated Reviews: Biochemistry (7th edition). Philadelphia, PA: Wolters Kluwer Health.
- VOET, D., & VOET, J. G. (2011). Biochemistry. Hoboken, NJ, John Wiley & Sons.
- Voet, D., Voet, J. G., & Pratt, C. W. (2016). Fundamentals of biochemistry (5th ed.). John Wiley & Sons.
- Berg, J. M., Tymoczko, J. L. and Stryer, L. Biochemistry. Freeman, 7th edition, 2011
- Lodish, H., Berk, A., Zipursky, S. L., Matsudaira, P., Baltimore, D. and James Darnell, J. Molecular Cell Biology , Freeman, 7th edition 2013
- Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K. and Walter P. Molecular Biology of the Cell. Garland Science, 6th edition 2014
- Mathews, C. K. & Van Holde, K. E. & Ahern, K. G. Biochemistry. Addison Wesley, 4th edition, 2012. (
- Voet, D. & Voet, J. G. Biochemistry. 4th edition, 2013.
- Voet, D., Voet, J. G. & Pratt, C. W. Principles of Biochemistry. Wiley, 4th edition, 2013.

8-2: Recmonded books:

- Burtis, Ashwood and bruns (2006) clinical chemistry and molecular diagnostics 4th ed., USA, Elseveir.
- 8.2d Kaneko, Harvey and Bruss (2008) Clinical Biochemistry of Domestic Animals, 6th ed. Elsevir Inc.



Devlin, Thomas M. 2011. Textbook of biochemistry: with clinical correlations. Hoboken, NJ: John Wiley & Sons.

- James H. Nichols, Carol A. Rauch, Michael Laposata 2013 Clinical Chemistry Quality in Laboratory Diagnosis (Kindle Edition)

8-3: Egyptian Knowledge Bank:

- Michael M, Srivastava R and Deans K (2019): Clinical Biochemistry: An Illustrated Colour Text, 6th Edition, Elsevier Ltd.
- Baynes J and Dominiczak M (2019): Medical Biochemistry, 5th Edition, Elsevier Ltd
- Koel M and Kaljurand M (2019): Green Analytical Chemistry: Edition 2, Royal Society of Chemistry.
- McPherson RA and Pincus MR (2017): Henry's Clinical Diagnosis and Management by Laboratory Methods, 23rd Edition, Elsevier Ltd.
- Donald V and Judith G (2011): Biochemistry, 4th Edition, Publisher: Wiley.

Scientific Journals

- International Journal of Biochemistry and Biophysics
- International Journal of Biochemistry and Molecular Biology
- International Journal of Biochemistry, Biophysics & Molecular Biology
- International Journal of Biological and Chemical Sciences
- Biochemistry
- Journal of molecular biochemistry

Scientific websites

- The Egyptian Knowledge Bank: <https://www.ekb.eg/web/guest/home>
- American Society for Biochemistry and Molecular Biology (ASBMB) <https://www.ascb.org/>
- American Society for Cell Biology (ASCB) <https://www.asbmb.org/>
- Biochemical Society (BS)
- <https://www.biochemistry.org/>
-

Course Coordinator

Head of Department

Dr. Tarek Kamal Abuzaid

Prof. Dr. Samir Ahmed El-Shazly



Course specification (2021 / 2022)

1 - Basic Information:

Course title: Clinical pathology

Academic Year: Diploma of Clinical Biochemistry

Total teaching hours: 96 hrs

Lectures: 48

Practical: 48

2 - OVERALL AIMS OF THE COURSE:

To produce a graduate that is provided with the essential facts, concepts, principles and practical skills in the field of hematology and clinical biochemistry.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of this course the student should be able to:

- a.1. Understand the basic theories and principals of hematology and clinical biochemistry.
- a.2. Discuss different hematological diseases, their etiology and associated laboratory findings
- a.3. Explain various organ dysfunctions; their etiology and associated laboratory findings.
- a.4. List disorders involving body macromolecules such as carbohydrates, proteins and lipids.
- a.5. Identify different disorders involving electrolytes and minerals.

3-B: INTELLECTUAL SKILLS:

By the end of this course the student should be able to :-

- b.1. Select the appropriate laboratory tests used for screening and diagnosis of pathologic states.
- b.2. Interpret the abnormal laboratory results on the basis of pathological mechanisms.
- b.3. Correlate between symptoms of some diseases and certain laboratory abnormal findings.
- b.4. Evaluate information and data from a variety of sources.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of this course the student should be able to:

- c.1. Master the requirements of basic clinical pathology laboratory and equipments
- c.2. Collect venous blood samples and understand indications for whole blood, plasma or serum.
- c.3. Apply the techniques of specimen collection, handling, processing and sources of errors.



c.4. Perform routine hematological laboratory tests as blood cell count, preparation of blood film.

c.5. Practice routine biochemical laboratory tests involving various organ dysfunctions.

c.6. Perform the routine urine examination, including physical, chemical, and microscopic analysis.

3- D: GENERAL SKILLS:

By the end of studying the course, the student should be able to

d.1. Utilize library and computer to apply scientific knowledge in reports or presentations.

d.2. Show ability to work in a team and effective communication with the laboratory staff.

d.3. Work to collective goals and responsibilities.

4 - COURSE CONTENTS:

	Course Topic	Lecture	Practical	Total Hours
1	Hematopoiesis	6	-	6
2	Red blood cells disorders	5	-	5
3	White blood cell disorders	6	--	6
4	Disorders of hemostasis	6	--	6
5	Disorders of metabolism	6	-	6
6	Disorders of organ functions	5	-	5
7	Hematopoiesis	5	-	5
8	Red blood cells disorders	5	-	5
9	White blood cell disorders	4	--	4
10	-Clinical pathology laboratory and equipments	-	3	3
11	-Sampling	-	3	3
12	-PCV and hemoglobin determination	--	4	4
13	-RBC count	-	4	4
14	-RBC indices and sedimentation rate	-	3	3
15	-WBC count	-	4	4
16	-Blood film making and examination	-	8	8
17	- Clinical biochemistry	-	12	12
18	- Urine analysis	-	7	7
	Total	48	48	96

5- TEACHING & LEARNING METHODS:

***Lectures**

(using data show, white board, overhead projector and brain storming)

***Practical and small group sessions:**

I: Practical training.

(Practical demonstrations, practice of skills, and discussions)

*** Self learning**



Computer researches and faculty library visits to prepare essays and presentations:

- Library researches.
- Internet researches.
- Discussion in the researches.
- Preparation of posters
- Preparation of scientific reports.

*** Audiovisual**

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - * Activation of office hours.
 - * Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	AT the end of the academic year	AT the end of the academic year	AT the end of the academic year
<u>7.c grads</u>	25	10	15

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- **Department notes:** available for students to purchase from the department.

8-2: Recmonded books:

- 8.2a Murray, Granner, Mayes and Rodwell, (2008) Harpers' illustrated Biochemistry, 27th ed., USA, Lange Medical Publications.
- 8.2b Harvey and Ferrier, (2011) Lippincott's illustrated review of biochemistry 5th ed. China, Wolterklwer business.
- 8.2c Albert, Johonson, Lewis, Raff, Roberts and Walter (2002) Molecular biology of the cell, USA, Garland science.

8-3: SUGGESTED books:

- 8.2c Burtis, Ashwood and bruns (2006) clinical chemistry and molecular diagnostics 4th ed., USA, Elsevir.
- 8.2d Kaneko, Harvey and Bruss (2008) Clinical Biochemistry of Domestic Animals, 6th ed. Elsevir Inc.

8.4: web sites and jouranlsand so on 35 }

- WWW.PubMed.com
- Intrnational of veterinary information services (IVIS)

Intended learning out comes of all topic

Course Topics	Knowl edge	Intellectual Skills	Profession al Skills	G and T Skills
Hematopoiesis	a1	b1, b3,b4	-	d1
Red blood cells disorders	a2	b1, b2, b3, b4	-	d1,d3
White blood cell disorders	a2	b1, b3	-	d1,d2
Disorders of hemostasis	a2	b1, b2	-	d1,d2
Disorders of metabolism	a4,5	b1, b3,b4	-	d1,d3
Disorders of organ functions	a3,5	b1, b3	-	d1
-Clinical pathology laboratory and equipments	-	b1, b3	C1	d1,d2
-Sampling	-	b1, b2, b3, b4	C2, C3,C4	d3,d2
-PCV and hemoglobin determination	-	b1, b2	C2, C3,C4	D3,d2
-RBC count	-	b1, b3,b4	C2, C3,C4	d3,d2
-RBC indices and sedimentation rate	-	b1, b3,b4	C2, C3,C4	d3,d2
-WBC count	-	b1, b3	C2, C3,C4	d3,d2
-Blood film making and examination	-	b1, b3,b4	C2, C3,C4	d3,d2
- Clinical biochemistry	-	b1, b3,b4	C5	d3,d2
- Urine analysis	-	b1, b3	C6	d3,d2

Evaluation Intended learning out comes

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectua l	Practical	General	
Written examination	A1.A2.A3.A4.A5.	B1		D1	25
Oral examination	A1.A2.A3.A4.A5.	B1.B2.B3. B4		D1	10
Practical examination		B1.B2.B3	C1.C2.C 3.C4.C5, C6	D2,3	15



Course specification (2020 / 2021)

1- Basic Information:

Course title: Physiology of blood and body fluid

Program(s) on which the course is given: Diploma of Clinical Biochemistry

Total teaching hours: 96 hrs

Lectures: 2hr/w

practical: 2hr/w

2- OVERALL AIMS OF THE COURSE:

By the end of this course, the student should acquire the concepts, principles and skills related to:

- 1- ensure that students reserve a comprehensive theoretical base in blood and blood forming elements.
- 2- provide students with knowledge, skills, experiences and confidence to qualify for employment in laboratories.
- 3- know Composition of body fluids
- 4- provide students with knowledge and skills in interpretation of their data,
- 5- study hormone nature, types of hormones, hormonal cycle and types of hormone receptors.
- 6- provide students with deep understanding of the structure of endocrine gland and different types of hormones secreted from it.

3- INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1-Understand the General functions of Blood
- A2-Explain factors affecting haematopoiesis
- A3 -Determine different types of anemia
- A4 - Have the basic knowledge about the blood component and function of each blood cell
- A5 -Get the information and understanding of the basic information of leucocytes and immunity
- A6 -Understand the molecular mechanism and function of each endocrine gland .
- A7- Memorize the Glomerular filtration rate, tubular functions, control of body fluid volume and osmolality role of kidney in acid – base balance.
- A8- Draw the normal Structure- function relationships pulmonary circulation, physiology of lung, mechanism of breathing, transport of oxygen and co₂, control of breathing.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1- summarize and present research findings in oral form in seminars and workshop.



B2- demonstrate team-working ability by the successful achievement of collaborative learn assignment.

B3- Interpret any endocrine situation concerning the endocrine system in the animal body.

B4- Measure and analyze different hormones in animal body and interpret the disorders .

B5- Analyze different samples to allow diagnosis of different problems of urinary.

B6- Illustrate correlation between the lung structure and its function

and retrieve data and understanding of O₂ and CO₂ dissociation curve.

3-C: Practical and professional skills:

By the end of the course, students should be able to:

C1. perform essential laboratory skills concerning advanced techniques associated with hematological research.

C2. collect and examine blood samples.

C3. Analyze electrolyte level in blood samples.

C4. Evaluation of the endocrine gland function through measurement of different hormone level in the blood by ELISA.

C5- Assessment of the different endocrine gland dysfunction

C6- Report glomerular filtration rate and other kidney tests.

C7- Show normal respiratory rate.

3-D: GENERAL AND TRANSFERABLE SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Coach and work in groups.

D2- Classify different duties

D3- Utilize computer and internet skills.

D4- Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

Topic	No. of hours	Lecture	Practical
General functions of Blood and respiration	8	4	8
Haematopoiesis	10	5	6
Anemia types and characters.	12	6	6
Leuckocytes and Immunity	10	5	6
Endocrine system	12	6	8



Water metabolism & Balance	12	6	6
Respiratory system	8	4	4
Total	72	48	48

5- TEACHING & LEARNING METHODS:

5.1 Advanced lectures: PowerPoint presentations including videos, and whiteboard Discussion and brain storming

5.2 Practical and small group sessions:

1: Practical training. (Practical demonstrations, practice of skills, discussions Microscopes and other facilities as Data show)

5.3 Self learning

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- Preparation of posters
- Preparation of scientific reports.

5.4 Distance Teaching and Learning: Using the Microsoft Teams platform, when necessary, such as during COVID-19 pandemics or when onsite (face-to-face) education is halted due to

weather emergencies or other reasons. Distance teaching may be offered synchronous or non-synchronous

* **Audiovisual** :Video show.

Teaching and Learning Methods	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Advanced lectures	A1-A8	B1-B6		D1-D4
Practical sessions		B1-B6	C1-C7	D1-D4
Self-Learning activities				D1-D4
Distance Teaching and Learning	A1-A8	B1-B6	C1-C7	D1-D4

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:

7.a Used methods	Written examination	Oral examination	Practical examination	Activities
7.b time	At the Week 48 th	At the Week 48 th	At the Week 47 th	During the course
7.c grads	25	10 } 39	10	5



Methods	I.L.O.S Evaluation			
	Knowledge	Intellectual	Practical	General
Written examination	A1-A8	B1-B6		D1
Oral examination	A1-A8	B1-B6		D2
Practical examination			C1-C7	D2

8. LEARNING AND REFERENCE MATERIALS:

8-1: Essential Books

- Animal Physiology. Richard W Hill, Gordon A Wyse, Margaret Anderson (4th Ed) ISBN: 9781605357379 Edition: 4 Paperback Oct 2017
- Principles of Animal Physiology (2016) 3rd edition. Christopher D. Moyes, Patricia M. Schulte
- Principles of Animal Physiology (2018) 3rd edition, Christopher D. Moyes, Patricia M. Schulte
- Eckert Animal Physiology: Mechanisms and Adaptations (1997) 4th Ed, David Randall, Warren Burggren
- Functional Anatomy and Physiology of Domestic Animals, (2017) 5th Edition, William O. Reece, Eric W. Rowe
- Cunningham's Textbook of Veterinary Physiology, 6th Edition - January 3, 2019
- Dukes' Physiology of Domestic Animals, (2015) 13th Edition, William O. Reece (Editor), Jesse P. Goff, Etsuro E. Uemura
- COMPARATIVE ANIMAL PHYSIOLOGY (2020) 1st Edition, by Philip C. Withers
- Anatomy and Physiology of Farm Animals, 8th Edition, Anna Dee Fails, Christianne Magee
- Essentials of Animal Physiology, (2007) S. C. Rastogi
- Equine Exercise Physiology (2002), David Marlin, Kathryn J. Nankervis
- Guyton and Hall Textbook of Medical Physiology (Guyton Physiology) (2022) 14th Edition, by John E. Hall PhD, Michael E. Hall MD MSc.
- Sturkie's Avian Physiology (2015) • Sixth Edition • 2015
- The Physiology of Fishes (2016), By Suzanne Currie, David H. Evans

8-2: Recommended books:

- Ruchebusch, Y., Phaneuf, I. and Dunlop, R (2000) Physiology of small and large Animals. B.C. Decker, Inc, Philadelphia, Hamilton.
- Swenson M.J, Reece, W.O. and Comstock (2015) Duke's Physiology of Domestic Animals. 11th edition, publishing Associates a division of Cornell University press. Ithaca and London.
- Gunningham, J. (2013) Text book of Veterinary Physiology 5th Edition. W.B. Saunders Company, Toronto, Montreal, Tokyo.
- Guyton, A. (2020) Text book of Medical physiology. 14th, W.B. Saunders Company.
- Ganong, W.F. (2020) Review of Medical Physiology. 26th (Middle East edition) Appleton and Lang 8.2.f- Periodicals, Web Sites, ... etc.

8-3: Egyptian Knowledge Bank:

- Animal Physiology, Beaver, BV and Höglund, DL. 2016. Academic Press, Elsevier Inc.
- Animal Physiology: An Environmental Perspective, by Patrick J. Butler, J. Anne Brown, et al. | Sep 23, 2020. Academic Press, Elsevier Inc.



• Principles of Animal Physiology, by Christopher Moyes and Patricia Schulte | Jan 15, 2015. Academic Press, Elsevier Inc.

• Animal Physiology: From Genes to Organisms, by Lauralee Sherwood, Hillar Klandorf, et al. | Jan 1, 2012. Academic Press, Elsevier Inc

• Anatomy and Physiology of Farm Animals, by Anna Dee Fails and Christianne Magee | Jul 11, 2018. Academic Press, Elsevier Inc.

• Veterinary Anatomy Coloring Book: Animal Anatomy and Veterinary Physiology Coloring Book Vet Tech, Summer Sparks | Sep 22, 2020. Academic Press, Elsevier Inc

• Functional Anatomy and Physiology of Domestic Animals, by William O. Reece and Eric W. Rowe | Aug 14, 2017, Academic Press, Elsevier Inc

• Introduction to Animal and Veterinary Anatomy and Physiology, by Victoria Aspinall and Melanie Cappello | Dec 12, 2019. Academic Press, Elsevier Inc

• Eckert Animal Physiology: Mechanisms and Adaptations, by David Randall | Nov 1, 2001, Academic Press, Elsevier Inc

• Animal Physiology: Adaptation and Environment, by Knut Schmidt-Nielsen | Apr 10, 1997. Academic Press, Elsevier Inc.

• Das, DN. Paul, D. and Mondal, S. 2022. Emerging Issues in Climate Smart Livestock Production. Biological Tools and Techniques. Academic Press, Elsevier Inc.

• Avian (Poultry) Production: 2nd Revised and Enlarged Edition, by D. Sapkota, D. Narahari, J.D. Mahanta, 2017.

• Poultry Health: A Guide for Professionals, by Paul Barrow, Venugopal Nair, Susan Baigent, Robert Atterbury, Michael Clark, 2021.

• Poultry Science, 5th Edition, by Colin G. Scanes, Karen D. Christensen, 2019.

8.4. Scientific Journals

- Animals
- Animal physiology and biochemistry
- Cells
- Life science
- Stress
- Biomedicine
- Animal reproduction science
- Veterinary sciences
- Scientific report
- .frontier in veterinary science
- Journal of Animal Science.
- Livestock Production Science.
- British Journal of Animal Science.

8.5. Scientific websites

- The Egyptian Knowledge Bank: <https://www.ekb.eg/web/guest/home>
- <https://animalphys4e.sinauer.com/>
- <https://teachmephysiology.com/>
- <https://www.nature.com/subjects/animal-physiology>
- <https://sites.msudenver.edu/haysc/biology-courses/animal-physiology-bio-3360/>
- <https://www.acsedu.com/Courses/animal-biology-animal-husbandry-i-599.aspx>
- <https://animalphys4e.sinauer.com/quiz/>
- <https://askabiologist.asu.edu/explore/animal-physiology>
- <https://www.sinauer.com/media/wysiwyg/tocs/AnimalPhysiology3.pdf>
- <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/animal-physiology>



• <https://library.uct.ac.za/c.php?g=869309&p=6239318>

• [Delaval Dairy Supply: http://www.delaval.com/en/-/Dairy-knowledge-and-advice/](http://www.delaval.com/en/-/Dairy-knowledge-and-advice/)

• [Lactation Biology: http://classes.acces.uiuc.edu/ansei308/index.html](http://classes.acces.uiuc.edu/ansei308/index.html)

• Heat Detection and Timing of Insemination for Cattle. Penn State, College of Agricultural Sciences, Cooperative Extension. <https://extension.psu.edu/heat-detection-and-timing-of-insemination-for-cattle> accessed 08/09/2017.

• National Dairy Database: <http://www.inform.umd.edu:8080/edres/topic/agr/ndd>

• The Babcock Institute: <http://babcock.cals.wisc.edu>

• WWW Virtual Library for Dairy Production* (Oklahoma).

<http://www.ansi.okstate.edu/library/dairy/>

• US Dairy Export Council: <http://www.usdec.org/about/whoweare.htm>

• The International Dairy Federation (IDF): <http://www.fil-idf.org/>

• Managing of dairy heifers: <http://www3.das.psu.edu/dcn/calfmgt/385/index.html>

• Management Practices Associated with High-Producing U.S. Dairy Herds (USDA):

http://www.aphis.usda.gov/vs/ceah/cahm/Dairy_Cattle/drymgmt.htm

• A beginners guide to raising sheep <http://www.sheep101.info/201/feedwaterequip.html>

Course Coordinator:

Dr/ Mustafa Shukry

Head of Department:

Prof.Dr/ Shawky Abdelhady Mahmoud

Course Matrix for achievement of Intended Learning Outcomes

	Topics	Hours	Knowledge & Understanding (a)								Intellectual Skills (b)						Practical & Professional Skills(c)							General & Transferable Skills(d)				
			1	2	3	4	5	6	7	8	1	2	3	4	5	6	1	2	3	4	5	6	7	1	2	3	4	
1	General functions of Blood and blood component	8	X			X											X	X	X	X	X	X	X		X	X	X	X
2	Haematopoiesis	10		X													X	X	X	X	X	X	X		X	X	X	X
3	Anemia types and characters.	12			X												X	X	X	X	X	X	X		X	X	X	X
4	WBCs and Immunity	10					X										X	X	X	X	X	X	X		X	X	X	X
5	Endocrine system	12							X								X	X	X	X	X	X	X		X	X	X	X
6	Urinary system and acid base balance	12								X				X			X	X	X	X	X	X	X		X	X	X	X
7	Respiratory system	8													X		X	X	X	X	X	X	X					

Course specification

(2021 / 2022)

1- BASIC INFORMATION

Code No.: Clinical Biochemistry Diploma
Academic Year: Biochemistry diploma

Date of specification: Sept., 2016

Total teaching hours: 96 h
Lectures: 48 h
Practical: 48 h

2- OVERALL AIMS OF THE COURSE:

To provide students with brief knowledge, skills and positive attitude concerning clinical parasitology in different animals, birds.

3- INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING (K.U):

By the end of the course students should be able to

A1-define briefly the fundamental concepts of Parasitology and with the technical vocabulary used in this field.

A2- discuss briefly how could arthropods are able to induce diseases in domesticated, certain wild animal, fish, birds and man.

A3-Identify briefly common taxa of arthropods based on morphological, biologic and geographical criteria and clinical observation.

A4-explainthe briefly behavior and ecology of different arthropod species and stages in the environment.

3-B- Intellectual skills (I.S)

By the end of the course student should be able to

B1-organize briefly the factors responsible for differentiating between infection and disease caused by various parasites.

B2-analyze briefly the parasite-drug interaction and parasite-host interaction (Immune inter-relations between Parasite and the host).

B3- compare briefly between the diagnostic stages of different parasites.

3-C- Professional and practical skills (P.P.S)

By the end of the course student should be able to

C1-Diagnose the different parasitic infection in different hosts by simple direct and indirect methods.

C2- Select simple rational treatment and control programs for arthropods population based on his/her knowledge of arthropods biology.

3-D- General and transferable skills (G.T.S)

By the end of the course student should be able to

D1-Protect their-selves from infection with different zoonotic arthropods.

D2-Protect their society and environment from pollution with arthropods.

D3- Work in groups

D4- use the internet and media facilities

4. COURSE CONTENTS:

TOPIC	Total hours (Semester)	Hours for lecture	practical
Introduction	5	5	0
Fecal examination	30	14	16

Blood examination	10	5	5
Examination of other body fluids and tissues	6	3	3
Examination for ectoparasites	30	14	16
Making permanent mounts of parasites	5	2	3
Serological diagnosis of parasitic diseases	10	5	5
Total	96	48	48

5:- TEACHING & LEARNING METHODS:

5.1:- Lectures

(computer based presentations and white board, brain storming)

5.2:- Practical sessions:

1: Practical training

(Practical demonstrations, practical skills for diagnosis, and discussions)

5.3:- self learning

(Computer searches and faculty library visits to prepare essays)

- Library searches.
- Internet searches.
- Discussion of the prepared essays.
- Parasitological figures and drawings.

5.4:- Audiovisual

Television circuit in the laboratories

6. METHODS FOR DISABLED STUDENTS:-

- Special handling in the laboratory with extra time if needed.
- Ensure that all students with disabilities have equal access to educational opportunities and to help students to achieve academic and personal success.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	At the end of 48 weeks	At the end of 48 weeks	At the end of 48 weeks
7.c grads	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- available notebooks and textbooks for students to purchase from bookstores.
- Overhead slide projectors, Dias, Microscopes, TV closed circuit, permanent slides and power presentations.

8-2: Recmended books:

- 1. Roberts, L. S. and J.J. Janovy. 2017. Foundations of Parasitology.5th Edition, W.C.B. Company, U.K.
- 2. Urquhart G. M., J. Armour, J. L. Duncan, A.M. Dunn, F. W. Jennings. 2015. Veterinary Parasitology, Longman Scientific Technical, U.K.
- 3. Soulsby, E. J. L. 2006. Helminths, Arthropods and Protozoa of Domesticated Animals. The English Language Book Society BailliereTindall, London.
- 4. Georgi, J. R., M. E. Georgi and V. J. Theodorides. 1999. Parasitology for Veterinarians. 7th Ed. W.B. Saunder Company London.
- 5. Wall, R. and D. Shearer. 2010. Veterinary Entomology. Chapman and Hall.
- 6. Hendrix, C. M. 1998. Diagnostic Veterinary Parasitology.2nd Edition.Msoby.

8-3: SUGGESTED MATERIALS:

Video tapes and CDs

8.4: web sites and journals

[WWW.PubMed.com](http://www.pubmed.com)

- **Parasitic Diseases**

<http://www.mic.ki.se/Diseases/c3.html>

- **Ectoparasites and Endoparasites**

<http://www.soton.ac.uk/~ceb/EctoEndodirectory/frontectoendo.htm>

- **WHO TDR Home Page** <http://www.who.int/tdr/>

- **DPDx -CDCs Division of Parasitic Diseases** <http://www.dpd.cdc.gov/dpdx/Default.htm>

- **Parasites and Parasitological Resources** <http://www.biosci.ohio-state.edu/~parasite/home.html>

- **CDC** <http://www.cdc.gov/>

- **Atlas of Medical Parasitology** <http://www.cdfound.to.it/HTML/atlas.htm>

- **David Gibson's Parasitological URLs** <http://www.diplectanum.dsl.pipex.com/purls/>

- International veterinary information services (IVIS)

- www.Vet.net.com

- Journal of Parasitology Research

- Advances in Parasitology

- Journal of veterinary Parasitology.

COURSE Ilos matrix

TOPIC	K.U (A)	I.S (B)	P.P.S (C)	G.T.S (D)
Introduction				D1-D2-D3-D4
Fecal examination	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Blood examination	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Examination of other body fluids and tissues	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Examination for ectoparasites	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Making permanent mounts of parasites	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Serological diagnosis of parasitic diseases	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4

Evaluation Ilos matrix:

TOOLS	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	practical	general	
Written examination	A1.A2.A3	B1.B2.B3		D1.D2.	50
Oral examination	A1.A2.A3	B1.B2.B3		D1.D2.D3.D4	25
Practical examination		B3	C1.C2.	D1.D2.	25

Course coordinators:

Name: Prof. Dr. Kahled Sultan

Head of the department

Name: Prof. Dr. Reda Khalafalla



Kafrelsheikh University
Faculty of Veterinary Medicine



Kafrelsheikh University
Faculty of Veterinary Medicine
Department of Theriogenology

Program Specification for Master Degree

(2021 - 2022)

Program Title:

Master of The Veterinary Science
(Artificial Insemination(AI))



Kafrelsheikh University
Faculty of Veterinary Medicine



Program Specification for Diploma Degree (2021-2022)

Program Title: Artificial Insemination(AI)



Kafrelsheikh University

Faculty of Veterinary Medicine

Department of Theriogenology

Program Specification for Diploma Degree

(2021- 2022)

A- Administrative information:

- 1- Awarding Body:** Kafrelsheikh University
- 2- Teaching Body:** Faculty of Veterinary Medicine
- 3- Department responsible:** Theriogenology
- 4- Program Title:** Artificial Insemination
- 5- Final award:** Diploma Degree
- 6- Registration period:** one year
- 7- Program Co- coordinator:** Prof. Dr.: Ismail Ismail Al-Kon

B- Professional information:

1- Aim of the Program:

- To provide the student of diploma with the latest professional skills in practices of Artificial insemination and related techniques.
- To supply the graduated students with the most recent knowledge in area of semen processing, evaluation and preservation.
- A Good grade in Diploma can serve as a basis for admission to master of veterinary medical science in the field of Theriogenology



2- Academic standards:

Academic reference standards (ARS) adopted by the faculty committee No 1(14/9/2014)

3-Graduate attributes:

At the end of the program, graduate must be able to:

- 3.1. Apply the gained specific knowledge and the relevant ones in professional practice.
- 3.2. Identify the professional problems and suggest solutions of the focus area.
- 3.3. Show satisfactory interpersonal and communication skills in his professional practice.
- 3.4. Communicate effectively and lead work team through professional scale.
- 3.5. Make decision according to the available information
- 3.6. Use of the available resources efficiently
- 3.7. Awareness with his role in society development and community preservation.
- 3.8. Reflects the commitment to act with integrity, credibility, and the rules of profession
- 3.9. Realize the importance of self and life-long learning.

4-Programme outcomes [intended learning outcomes (ILOs)]

a. Knowledge and understanding:

On successful completion of this program graduate will be able to:

- a.1. Define basic principles and theories of physiology, biochemistry, anatomy, histology, microbiology and Diseases of reproduction and artificial insemination.



- a.2. Recognize the legal and ethical principles of dealing with artificial insemination to enhance animal reproduction.
- a.3. Outline basics and principles of quality assurance in applied practice in the artificial insemination.
- a.4. Recognize the influence of artificial insemination practices on surrounding environment and methods to maintain clean environment.

b. Intellectual skills:

At the end of the program graduate must be able to:

- b.1. Analyze different artificial insemination problems to improve animal reproduction.
- b.2. Solving artificial insemination problems using the available facilities and information.
- b.3. Relate between different results in the recently published scientific papers in artificial insemination field.
- b.4. Assess risk in the practices of artificial insemination.
- b.5. Reading analytically researches and scientific topics in the field of artificial insemination.
- b.6. Select the right decision related to artificial insemination using available information

c. Practical and professional skills:

At the end of the program graduate must be able to:

- c.1. Master the basic practical skills in artificial insemination and reproduction
- c.2. Write case report and Follow-up chart.

d. General and transferable skills:



At the end of the program, graduate must be able to:

- d.1.** Communicate effectively with his professors, collages and animal owner (s).
- d.2.** Utilize information technology to serve improvement of professional practice.
- d.3.** Self assessment and determine educational needs.
- d.4.** Present research findings in oral and written using appropriate software (e.g. power point, word, excel and database).
- d.5.** Work in multidisciplinary team and manage time and wok in research group.
- d.6.** Lead team under different professional circumstances.
- d.7.** Self and life-long learning

5-program structure

course	Total hours	Lecture (hours/week)	Practical (hours/week)
Female infertility	192	2	2
Reproductive physiology	48	1	-
Microbiology of reproductive system	1144	1	2
Artificial Insemination	192	2	2
Biochemistry of reproduction	96	1	1
Anatomy and histology of the genital system	96	1	1

6-Teaching and Learning Methods:

The program features a variety of teaching approaches for different intended learning objectives, including lectures, practical and lab sessions, field visits and seminars.

7- Student assessment:

The program courses depends on different assessment ways:



1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills

Assessment of program intended learning outcomes

Tool or method	ILOs			
	K & U (a)	I.S (b)	P.P (c)	G.T (d)
Written	1-4	1,2,4,5,6		1-7
Oral	1-4	1,3,4		1-7
Practical		1,2,6	1-2	1-7

8-Marking scale as follow:-

Grade		Percentage
Excellent		> 90
Very good		>80
Good		>70
Pass		>60
Fail	weak	45 to less than 60
	very weak	Less than 45

9-Evaluation of program outcomes

Code	Evaluator	Tools	Sample
1	Postgraduate students	Questioners	20%
2	Stakeholder	Questioners & Open discussion	10
3	Alumni	Questioners	15



4	External examiners	report	1
5	External evaluators	report	1

10. Program Admission Requirements:

Applicant must normally satisfy the Faculty of Veterinary Medicine University of Kafrelsheikh general entrance and requirement.

- The applicant must have regular attendance in his courses according to the schedule of the faculty.

11. Regulations for progression of program

- a) Registration period for the Diploma in veterinary medicine sciences is one year after the approval date by the Faculty council,.
- b) The student should conduct the courses proposed by both department council and approved by postgraduate and research committee and faculty council (article 32) in regulation law list and the student will entitled to apply for the exam. only after meeting attendance rate for each courses.
- c) The student should pass written, practical and oral exams successfully in all courses, and the grade will be estimated according to in regulation law list.
- d) The Faculty council has the right to deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- e) Registration will be during September of each year.
- f) Failure in or depriving from entering one or more course did not requires reexamination of successful passed courses.

12-Examination Regulations

- a- Time of written exam, 3 hours for each course that has 3 hours or more for lecture / practical /week. **If has less than 3 hours/week, the time of exam, is 2 hours only.**



b- The final degree of each course which has 3 hours (lecture and practical) per week is 100 and less than 3 hours is 50 degrees and divided into 50% for written exam, and 50% for practical and oral exam.

Program Co-ordinator:

Head of Department

Prof.Dr. Ismail EL-kon

Prof.Dr. Esam Elmadaly

Matching program ILOs with ARS - Matrix

Prog ILOs	ARS																		
	K&U (a)				I.S. (b)						P.P. (c)		G.T. (d)						
	1	2	3	4	1	2	3	4	5	6	1	2	1	2	3	4	5	6	7
K&U	1	2	3	4															
I.S.					1	2	3	4	5	6									
P.P.											1	2							
G.T.													1	2	3	4	5	6	7



Program specification matrix of diploma of AI (2013-2014)

Course title	Total Contact hours/ course	No. of hours / week			Program ILOs covered (by No.)			
		Lec t	Lab	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
Female infertility	144	2	2	4	a.1, a.2, a.3, a.6, a.7, a.8	b.1, b.2, b.3, b.4, b.5, b.6, b.7	c.1, c.2, c.3, c.6, c.7, c.8, c.9	d.1, d.2, d.3, d.4,d.5, d.6, d.7
Reproductive physiology	36	1	-	1	a.5, a.6	b. 2, b.7	c.4, c.5, c.8	d.2, d.3, d.4,d.5, d.6, d.7
Microbiology of reproductive system	108	1	2	3	a.3	b. 2	c.2, c.8	d.2, d.3, d.4,d.5, d.6, d.7
Artificial Insemination	144	2	2	4	a.2, a.5	b. 2	c.8	d.2, d.3, d.4,d.5, d.6, d.7
Biochemistry of reproduction	72	1	1	2	a.4, a.6.	b. 2, b.7	c.5, c.8	d.2, d.3, d.4,d.5, d.6, d.7
Anatomy and histology of the genital system	72	1	1	2	a.4, a.6. a7, a8	b. 2, b.7	c.5, c.8	d.2, d.3, d.4,d.5, d.6, d.7
Total	576	8	8	16				



ARS for Diploma in Artificial Insemination

1) Graduate attributes

At the end of the program, graduate must be able to::

- 1) Apply the gained specific knowledge and the relevant ones in artificial insemination practice.
- 2) Identify the professional problems and suggest solutions of the artificial insemination.
- 3) Show satisfactory interpersonal and communication skills in his professional practice.
- 4) Communicate effectively and lead work team through professional scale.
- 5) Make decision according to the available information
- 6) Use of the available resources efficiently
- 7) Awareness with his role in society development and community preservation.
- 8) Reflects the commitment to act with integrity, credibility, and the rules of profession
- 9) Realize the importance of self and life-long learning.

A) Knowledge and understanding

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Recognizing theories and principles of physiology, biochemistry, anatomy, histology and microbiology of reproduction and artificial insemination	Basics, theories and specific knowledge in educational field and sciences related to professional practice
2)	Recognizing ethical and legal principles for professional practice in the field of artificial insemination.	Ethical and legal principles related to professional practice
3)	Recognizing the bases of quality in a artificial insemination	Basics and principles of quality assurance in professional practice in the field of specialization
4)	Realize the impact of artificial insemination on environment and work to preserve and maintain the environment.	Impact of professional practice on environment and work to preserve and maintain the environment



B) Intellectual skills

Adopted ARS		NARS (Diploma)	
<i>By the end of this program the graduate should understand and accommodate the following:</i>		<i>By the end of this program the graduate should understand and accommodate the following:</i>	
1)	Determining and analyzing the artificial insemination problems and arrange them according to priorities.	Determination and analysis of professional problems in the field of specialization and arranging them according to priorities	
2)	Solving artificial insemination and reproductive problems of farm animal using the available facilities and information.	Solving professional problems in specialization field	
3)	Reading analytically researches and scientific topics in the field of artificial insemination.	Analytical reading of researches and scientific topics in the field of specialization	
4)	Assessing risks in the practices of artificial insemination.	Risk assessment in professional practice.	
5)	Making professional decisions related to artificial insemination using available information.	Professional decision making using available information	

C) Professional and practical skills

Adopted ARS		NARS (Diploma)	
<i>By the end of this program the graduate should understand and accommodate the following:</i>		<i>By the end of this program the graduate should understand and accommodate the following:</i>	
1)	Applying basic and professional skills in the field of artificial insemination.	Applying professional skills in the field of specialization	
2)	Fulfilling practical and Laboratory techniques for the field of artificial insemination.		
3)	Writing, concluding and evaluating a professional and conclusive report.	Writing professional reports	

D) General and transferable skill

Adopted ARS	NARS (Diploma)
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	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Effective communication with teaching staff, colleagues and the community	Effective communication
2)	Utilizing information technology in scientific research and publications.	Utilizing information technology to serve development of professional practice.
3)	Updating information and knowledge and exchange it with staff and colleagues.	Self-assessment and determination of personal educational needs.
4)	Identifying and using different sources of information and knowledge in poultry and rabbits diseases and other related topics	Using different resources to obtain knowledge and information.
5)	Respecting the importance of team work and do good control of time.	Working in team and efficient time management.
6)	Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team	Leading a team in familiar professional contexts.
7)	Using the tools important for self and continuous learning	Self and continuous learning

أولاً: برامج دبلومه الدراسات العليا

١- مواصفات الخريج

خريج برنامج دبلومه الدراسات العليا في أي تخصص يجب أن يكون قادراً على:

١. تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
٢. تحديد المشكلات المهنية واقتراح حلولاً لها
٣. إتقان المهارات المهنية واستخدام الوسائل التكنولوجية المناسبة في ممارسته المهنية
٤. التواصل وقيادة فرق العمل من خلال العمل المهني المنظمي
٥. اتخاذ القرار في ضوء المعلومات المتاحة
٦. توظيف الموارد المتاحة بكفاءة
٧. الوعي بدوره في تنمية المجتمع والحفاظ على البيئة
٨. التصرف بما يعكس الالتزام بالنزاهة والمصداقية وقواعد المهنة وتقبل المسائلة والمحاسبة
٩. إدراك ضرورة تنمية ذاته والانخراط في التعلم المستمر

٢- المعايير القياسية العامة

١ المعرفة والفهم. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على فهم و
استيعاب كل من:

- أ- النظريات والأساسيات والمعارف المتخصصة في مجال التعلم وكذا العلوم ذات العلاقة بممارسته المهنية
- ب- المبادئ الأخلاقية والقانونية للممارسة المهنية في مجال التخصص
- ج- مبادئ وأساسيات الجودة في الممارسة المهنية في مجال التخصص
- د- تأثير لممارسة المهنية على البيئة والعمل على الحفاظ على البيئة وصيانتها

٢ المهارات الذهنية. ٢

- بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
- أ-تحديد و تحليل المشاكل في مجال التخصص و ترتيبها وفقا لأولوياتها
 - ب-حل المشاكل المتخصصة في مجال مهنته
 - ج-القراءة التحليلية للأبحاث و المواضيع ذات العلاقة بالتخصص
 - د-تقييم المخاطر في الممارسات المهنية
 - هـ-اتخاذ القرارات المهنية في ضوء المعلومات المتاحة

٣ المهارات المهنية. ٢

- بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
- أ-تطبيق المهارات المهنية في مجال التخصص
 - ب-كتابة التقارير المهنية

٤ المهارات العامة و المنتقلة. ٢

- بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
- أ-التواصل الفعال بأنواعه المختلفة
 - ب-استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية
 - ج-التقييم الذاتي و تحديد احتياجاته التعليمية الشخصية
 - د-استخدام المصادر المختلفة للحصول على المعلومات و المعارف
 - هـ-العمل في فريق و إدارة الوقت
 - و-قيادة فريق في سياقات مهنية مألوفة
 - ز-التعلم الذاتي و المستمر



KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF THERIOGENOLOGY

Course specification
(2021 / 2022)

1 - Basic Information:

Code number: -

Course title: Artificial Insemination (AI)

Academic Year: Academic year of Artificial diploma Programme

Total teaching hours: 192 hrs

Lectures: 96 hrs

Practical: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

To supply the students with the most recent knowledge and technological applications of artificial insemination. Also to enable the students to apply the latest professional skills in handling semen in AI centers and farms.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1 Recognize the importance AI in genetic improvement of reproductive and productive performance of farm animal .

A2-Identify the principle and basics of sire selection and breeding soundness examinations for bulls required in AI centers.

A3-Recognize the semen biochemistry and metabolism.

A4-Memorize the techniques of semen processing and preservation

A5-Define good practice in insemination techniques and related technology.

A6-Define advanced reproductive programs as fixed time insemination after ovsync, estrous synchronization etc.....

A7- Recognize the sexed semen and its advantages.

3-B: INTELLECTUAL SKILLS:



By the end of the course, students should be able to:

- B1- Analyze herd records and recording systems for assessing the reproductive management and rate of fertility in a herd.
- B2- Modify programs enhancing fertility such as OVSYNCR.
- B3- Compare between AI and natural services as a tools for improving fertility in farm animals.
- B4- Schedule the duties related to fertility management in dairy farms.-
- B5- Choose the best approach to apply AI to control venereal infection using the available facilities and information.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1- Demonstrate the best methods for collection, evaluation, and processing of semen.
- C2- Sire selection and breeding soundness examinations
- C3- Apply fixed time insemination together with the programs enhancing fertility.
- C4- Use the sexed semen as tool for overcoming problem of lack in the number of replacement heifers.
- C5 – Apply computer programs related to fertility management in a dairy herd.
- C6- Choose the suitable technique for inseminating various females of animal species.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1- Present patient’s data in an organized and informative manner.
- D2-Communicate effectively with animal's owners using appropriate communication skills.
- D3-Manipulate the advanced computer programs controlling fertility in dairy herds.
- D4- Coach and work in groups and can classify different duties
- D5- Utilize computer and internet skills.
- D6-Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Advantages & disadvantages of AI	4	4	-
Sire selection and breeding soundness examinations	20	8	12
Semen collection and evaluation	24	-	24
Semen biochemistry and metabolism	24	12	12
Semen dilution and preservation	36	24	12
Thawing of semen and insemination techniques	30	12	18
Technology of sexed semen	18	12	6
computer programs managing fertility in dairy farms.	24	12	12
Fixed time insemination as an integral part of programs enhancing fertility.	12	12	-



5- TEACHING & LEARNING METHODS:

*Lectures

using data show.

*Practical and small group sessions:

Practical demonstrations, practice of skills and discussions

* Site visits

Visits to dairy farms for practical application.

* Self learning

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.

- **Audiovisual**

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

No disabled students until now, but if present the staff members in the department plan to held several meetings with the students to face any difficulties that meet the students.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	oral examination	Practical examination
7.b time	During December following the end of theyear	During December following the end of ther year	At the end of the year
7.c grads	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Text books in Theriogenology available in library of the faculty.
- Overhead projections, Microscopes, , slides and computer presentations used during teaching.

8-2: Recmonded books:

- 8-3.a - Veterinary Reproduction and Obstetrics, 7th Ed. by Arthur G.H., et al. (1996).
 8-3.b - Veterinary Obstetrics and Genital diseases, 3rd Ed. by Robert, G.R. (1986).
 8-3.c - Current Therapy in Theriogenology, 1st Ed. by Morrow D.A. (1986).
 8-3.d - Current Therapy in Large animal Theriogenology, 2nd ed., by Youngquist R.S. (2007).

8-3: SUGGESTED books:

- 8-2.a -Comparative reproductive Biology .(2007) by Schatten, H. and Constantinescu, G,M 1st Ed. Wiley-Blackwell.
 8-2.b -Bovine Reproduction (2014) by Hopper, R.M, ISBN: 978-1-118-47083-1, ,Wiley-Blackwell
 8-2.c -Insights from Animal Reproduction(2016) edited by Carreira,



8-2.d -Biotechnology of Animal Reproduction(2016) by Seneda, M.M., Silva-Santos K.C., and Marinho, L.S.R.

8.4: web sites and jouranlsand so on

- 8.4.a-Society for Theriogenology
- 8.4.b-Ruminant and camelid reproductive ultrasonography
- 8.4.c-REPRODUCTIVE ULTRASOUND - Virginia Herd Health Management Service
- 8.4.d-Reproduction
- 8.4.e-J. of Animal Reproduction Science.
- 8.4.f- J. of Theriogenology.
- 8.4.j- Reproduction in Domestic Animals

9.1. Course content ILOs Matrix:

TOPIC	K.U (a)	IS (b)	P.P.S (c)	G.T.S (d)
Advatagea & disadvantages of AI	A1	B1- B5	-	D1- D6
Sire selection and breeding soundness examinations	A2	B1- B5	C2	D1- D6
Semen collection and evaluation	-	B1- B5	C3	D1- D6
Semen biochemistry and metabolism	A3	B1- B5	C1	D1- D6
Semen dilution and preservation	A4	B1- B5	C1	D1- D6
Thawing of semen and insemination techniques	A5	B1- B5	C5	D1- D6
Technology of sexed semen	A5,6	B1- B5	C3	D1- D6
computer programs managing fertility in dairy farms.	A5,6	B1- B5	C4,C5, C6	D1- D6
Fixed time insemination as an integral part of programs enhancing fertility.	A6, A7	B1- B5	C2	D1- D6

9.2. Assessment ILOs Matrix :

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectual	Practical	general	
Written examination	A1.A2.A3.A4.A5.A6.A7.	B1		D5,D6	50
Oral examination	A1.A2.A3.A4.A5.A6.A7.	B1.B2.B3, B4& B5		D5,D6	25
Practical examination		B1.B2.B3, B4& B5	C1, C2, C3, C4, C5 & C6	D1, D2,D3,D4,	25



Course Coordinator:

Prof. Adel A. Ramoun

Head of Department:

Prof. Dr. Esam EL- Madaly

KAFR ELSHEIKH UNIVERSITY
FACULTY OF VETERINARY MEDICINE
DEPARTMENT OF THERIOGENOLOGY

Course specification (2021 / 2022)

1 - Basic Information:

Code number: Female infertility
Course title: Female infertility
Academic Year: one year of AI diploma

Total teaching hours: 192 hrs

Lectures: 96 hrs

Practical: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

To provide the students with the basic knowledge concerning causes, diagnosis and treatment of female infertility as well as the practical skills in the field of reproduction such as heat detection and pregnancy diagnosis especially by sonography.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1- Memorize the congenital, , hormonal and pathological causes of female infertility in farm animals.
- A2- Define the environmental causes of infertility.



A3 – Identify the nutritional causes of infertility.

A4 – Describe and categorize the various causes of repeat breeders.

A5 - Define the infectious and non-infectious causes of reduced conception rate.

A6- Clinical uses of reproductive hormones.

A7- Current therapies in theriogenology

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1-Analyze the causes and important symptoms of various causes of infertility.

B2-Interpret the results of laboratory tests such as the blood level of different reproductive hormone

B3-Operate differential diagnosis among the different causes of infertility.

B4-Construct the appropriate reproductive health measures to reduce the incidence of the infertility

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1- Apply rectal palpation as diagnostic tool for uterine pathology.

C2- Use serological tests for diagnostic purposes in reproduction especially subclinical endometritis.

C3- Apply ultrasonography for early pregnancy diagnosis.

C4 - Employ the heat detection for improving submission rate

C5 – Evaluate reproductive performance in a herd.

C6- Manipulate the problem of reduced conception rate in a herd.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Present patient’s data in an organized and informative manner.

D2-Communicate effectively with animal's owners using appropriate communication skills.

D3-Demonstrate appropriate professional attitudes and behaviors in different practice situations.

D4- Coach and work in groups.

D5-Classify different duties

D6- Utilize computer and internet skills.

D7-Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

S.NO.	TOPIC	Total hours	Hours for lecture	Hours for practical
1	Congenital causes of infertility	12	12	-
2	Pathological causes of infertility	12	12	-
3	Hormonal causes of infertility	14	14	-
4	Environmental causes of infertility	12	12	-
5	Nuritional causes of infertility	10	10	-
6	Repeat breeding & reproductive failure	12	12	-
7	Rectal palpation and vaginal examinations	30	-	30
8	Pregnancy diagnosis and reproductive	32	-	32



Ultrasonography				
9	Heat detection	34	-	34
10	Clinical uses of reproductive hormones	12	12	-
11	Current therapies in theriogenology	12	12	-
12	Total	192	96	96

5- TEACHING & LEARNING METHODS:

*Lectures

using data show.

*Practical and small group sessions:

Practical demonstrations, practice of skills and discussions

* Site visits

Visits to dairy farms for practical application.

* Self learning

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- **Audiovisual**
Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

No disabled students until now, but if present the staff members in the department plan to held several meetings with the students to face any difficulties that meet the students.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	oral examination	Practical examination
7.b time	During December following the end of the year	During December following the end of the year	two weeks before the end of the year
7.c grads	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Text books in Theriogenology available in library of the faculty.
- Overhead projections, Microscopes, , slides and computer presentations used during teaching.

8-2: Recomended books:

- 8-3.a - Veterinary Reproduction and Obstetrics, 7th Ed. by Arthur G.H., et al. (1996).
- 8-3.b - Veterinary Obstetrics and Genital diseases, 3rd Ed. by Robert, G.R. (1986).
- 8-3.c - Current Therapy in Theriogenology, 1st Ed. by Morrow D.A. (1986).
- 8-3.d - Current Therapy in Large animal Theriogenology, 2nd ed., by Youngquist R.S. (2007).

8-3: SUGGESTED books:

- 8-2.a -Comparative reproductive Biology .(2007) by Schatten, H. and Constantinescu,



8-2.b -Bovine Reproduction (2014) by Hopper, R.M, ISBN: 978-1-118-47083-1, Wiley-Blackwell

8-2.c -Insights from Animal Reproduction(2016) edited by Carreira, R. P., ISBN 978-953-51-2268-5, Publisher: InTech, Chapters published.

8-2.d -Biotechnology of Animal Reproduction(2016) by Seneda, M.M., Silva-Santos K.C., and Marinho, L.S.R.

8.4: web sites and journalsand so on

8.4.a-Society for Theriogenology

8.4.b-Ruminant and camelid reproductive ultrasonography

8.4.c-REPRODUCTIVE ULTRASOUND - Virginia Herd Health Management Service

8.4.d-Reproduction

8.4.e-J. of Animal Reproduction Science.

8.4.f- J. of Theriogenology.

8.4.j- Reproduction in Domestic Animals

9.1. Course content ILOs Matrix:

Assessment ILOs Matrix :

TOPIC	K.U (a)	LS (b)	P.P.S (c)	G.T.S (d)
Congenital causes of infertility	A1	B1-4	-	D1-7
Pathological causes of infertility	A1	B1-4	-	D1-7
Hormonal causes of infertility	A1	B1-4	-	D1-7
Environmental causes of infertility	A2	B1-4	-	D1-7
Nutritional causes of infertility	A3	B1-4	-	D1-7
Repeat breeding & reproductive failure	A4-A5	B1-4	-	D1-7
Rectal palpation and vaginal examinations	-	B1-4	C1,c2	D1-7
Pregnancy diagnosis and reproductive Ultrasonography	-	B1-4	C3	D1-7
Heat detection	-	B1-4	C4	D1-7
Clinical uses of reproductive hormones	A6	B1-4	C5	D1-7
Current therapies in theriogenology	A7	B1-4	C6	D1-7

Methods	I.L.O.S Evaluation			Marks allocated
	Knowledge	Intellectual	Practical	
Written examination	A1.A2.A3.A4.A5.A6.A7.A8.A9	B1		50



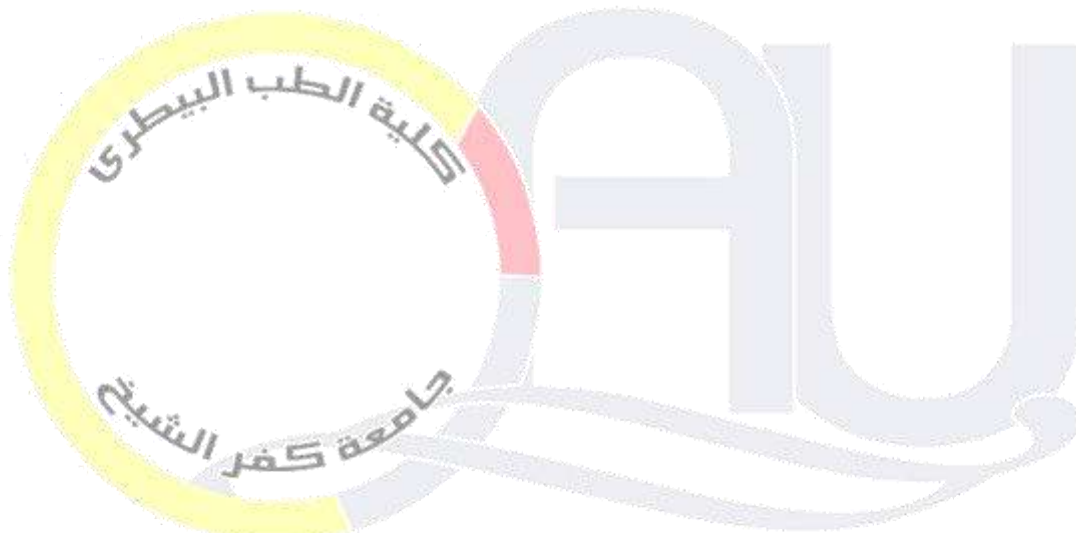
Oral examination	A1.A2.A3.A4.A5.A6.A7. A8.A9	B1.B2.B3.B4		D7	25
Practical examination		B1.B2.B3	C1.C2.C3. C4.C5	D1,D2,D3D4.D5.D 6	25

Course Coordinator:

Prof. Adel A. Ramoun

Head of Department:

Prof. Esam Elmadaly



KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF CYTOLOGY AND HISTOLOGY

Course specification (2021 / 2022)

1 - Basic Information:

Code number :

Course title: *Anatomy and Histology of Genital system*

Academic Year: *Diploma of Artificial Insemination*

Total teaching hours: 96hrs hrs

Lectures: 48 hrs

Practical:48 hrs

2 - OVERALL AIMS OF THE COURSE:

By the end of this course the graduates should be able to

- To provide student with basic knowledge concerning basic anatomy and histology of the male genital system in farm animals.



- To let students gain skills enabling them to differentiate between normal and abnormal components of the male genital system.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of this course the graduates should be able to:

- A1-** Recognize the microscopical picture of different tissues constituting the male and female genital system of farm animals.
- A2-** Describe histological structure of the different organs constituting the male **and female** genital system.
- A3-** define different components of the male and female genital system of different domestic animals,
- A4-** realize macroscopic structure of the different organs constituting the male **and female** genital system.
- A5-** State the structure of the different organs constituting the male **and female** genital system.
- A6-** outline the structural relationship between the different organs of the male **and female** genital system and between these organs and the other body organs.

3-B: INTELLECTUAL SKILLS:

By the end of this course the graduates should be able to:

- B1-** have the ability to identify the different histological structures of male and female genital system
- B2-** determine the anatomical structure of different organs of male and female genital system.
- B3-** differentiate between morphology of male and female genital system in different farm animals.
- B4-** create the ability to differentiate between healthy and non-healthy male and female genital system.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of this course the graduates should be able to:

- C1-** prepare an ideal male and female genital system samples and slides and learn how to read these slides.
- C2-** construct animal model and/or plastination for some organs of male and female genital system.
- C3-** examine the normal structure of male and female genital system.
- C4-** draw diagrams of macro- and microscopic structures of the male and female genital system indicating the site of most common affection.

3- D: GENERAL SKILLS:

By the end of this course the graduates should be able to:

- D1-** Coach and work in groups.
- D2-** Classify different duties
- D3-** Utilize computer and internet skills.
- D4-** Develop the ethical behaviors between students and staff members as well as among the students themselves.



4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Histology of male Genital system	24	12	12
Anatomy of Male genital system	24	12	12
Histology of female Genital system	24	12	12
Anatomy of female genital system	24	12	12
Total	96	48	48

5- TEACHING & LEARNING METHODS:

5.1. Lectures

The department council assigns one of the teaching staff to teach a special chapter in the course syllabus. The entire student will attend one class 3hrs/week. The teacher will use all the available teaching tools including data show and overhead projectors. The lectures usually take the form of open discussion

5.2. Discussion sessions

The student will be responsible for making a presentation about and discuss one subject (usually related to his thesis subject) in front of all department members

5.3. Information collection

The supervisors will make assignment for their student to collect data and make a complete review about one subject (usually related to his thesis subject).

5.4. Practical training / laboratory

The students will take the practical course 4 hours/week under supervision of one of the department member 2 assistants. During the lab the student will do all practical syllabus by them self.

5.5. Research assignment field

The student will be responsible for searching for the most recent research pint and designs a plan for his research work.

6. METHODS FOR STUDENTS With limited capabilities:-

- *Activation of office hours.
- *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.A: ASSESSMENT Methods:



7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	At the end of THE YEAR	At the end of the year	At the last week of practical course
7.c grads	25	10	15

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- **Department notes:** available for students to purchase from bookshops in front of the faculty.
- Overhead projections, Microscopes, TV closed center, slides and computer presentations used during teaching.

8-2: Recmended books:

- Eurell J. A., Frappier B. L. (2007):Dellmann's Textbook of Veterinary Histology (6th Edition) .Blackwell publishing
- Banks , W .J.(1993): Applied Veterinary Histology ,3rd.Ed. Mosby Year Book.ST .Louis ,Baltimore , Boston ,Chicago ,London ,Philadelphia , Sydney.

8-3: SUGGESTED books:

- Stevens, A, Lowe , J. S. and Young, B. (2002) : Wheaters Basic Histology , A colour Atlas and Text . 4th Ed . Churchill Livingstone. Edinburgh , London, New York, Philadelphia , St . Louis , Sydney , Toronto.
- Young , B. and Heath , J.W .(2000) Weaters Functional of Histology . A text and Colour Atlas . 4th Ed . Churchill Livingstone. Edinburgh, London , New York, Oxford , Philadelphia , St Louis, Sydney , Toronto .

8.4: web sites and jouranlsand so on

- WWW.PubMed.com
- Intrnational of veterinary information services (IVIS)
- www.Vet.net.com
- journal of molecular histology
- Anatomia histologia embryologia journal
- Journal of veterinary anatomy.

Course content ILOs Matrex:



TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Histology of male Genital system	A1,A2,A6	B1,B2,B3 B4	C1,C2, C3,C4	D1,D2, D3,d4
Anatomy of Male genital system	A3, A5,A6,	B1,B2,B3 B4	C1,C2, C3,C4	D1,D2, D3,d4
Histology of female Genital system	A1,A2,A6	B1,B3 B4	C1, C3,C4	D1,D2, D3,d4
Anatomy of female genital system	A3,A4,A6	B2,B3 B4	C2, C3,C4	D1,D2, D3,d4

Assessment ILOs Matrix:

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	general	
Written examination	A1.A2.A3.A4.A5.A6	B1.B2		D4	25
Oral examination	A1.A2.A3.A4.A5.A6	B1.B2.B3.		D3	10
Practical examination		.B4.B5.B6	C1.C2.C3.C4. C5	D1,2	15

Course Coordinator:

Head of Department of cytology and histology

Dr Mohamed Kassab

Dr Mohamed Kassab

Head of Department of Anatomy

Dr Mohamed Rizk

Course specification (2020 / 2021)

1 - Basic Information:

Course title: **Physiology of reproduction** (Animal physiology)..



Academic Year (Diploma of Artificial Insemination)

Total teaching hours: 48 hrs

Lectures: 48 hrs

2 - OVERALL AIMS OF THE COURSE:

- a – to study hormone nature, types of hormones, hormonal cycle and types of hormone receptors.
- b-To provide students with deep understanding of the structure of endocrine gland and different types of hormones secreted from it.
- c-Students will have the basic knowledge about the male and reproductive system functions
- d- Know semen production , how to collect semen sample
- e- Understand examination of semen and sources of abnormalities of sperms
- f-The student should understand the stress hormones and effect of temperature on male fertility

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1- Describe the hormones, H.cycle, molecular mechanism

A2- explain the mechanism of endocrine glands and their impacts on male fertility

A3- define the basic knowledge about the male reproductive systems physiology, regulation and the endocrine factors that participate in normal sexual drive and fertility and the factors that may cause dysfunctions, infertility or sterility

A4- Recognize the information about accessory male reproductive organs functions and factors affecting

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- evaluate of the reproductive performance of male animal through evaluation of the semen sample.

B2- analyze of the reproductive performance of female animal through measurement of different reproductive hormones

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

No practical part for this course

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able:

D1-Coach and work in group.

D2-Classify different duties.

D3-Utilize computer and internet skills.

D4-Develop the ethical behaviours between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	No of hours		
	Total hours	lecture	practical



Hormones and hormonal cycle	10	10	-
Accessory sexual organs and their functions	8	8	-
Male reproductive hormones and their function	10	10	-
Semen composition, collection and evaluation	10	10	-
Factors affecting male fertility	10	10	-
Total	48	48	-

5- TEACHING & LEARNING METHODS:

*Lectures

(using data show, white board, overhead projector and brain storming)

* Self learning

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- Preparation of posters
- Preparation of scientific reports.

* Audiovisual

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination
7.b time	At the end of the academic year	At the end of the academic year
7.c grads	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: Recmended books:

8.2.a- Ruchebusch, Y., Phaneuf, I. and Dunlop, R (1991) Physiology of small and large Animals.
B.C.Decker ,Inc, Philadelphia, Hamilton.



8.2.b- Swenson M.J, Reece, W.O. and Comstock (1993) Duke's Physiology of Domestic

Animals. 11th edition, publishing Associates a division of Cornell University press. Ithaca and London.

8.2.c- Gunningham, J. (1992) Text book of Veterinary Physiology. W.B. Saundero Company, Toronto, Montreal, Tokyo.

8.2.d- Guyton, A. (1991) Text book of Medical physiology. 8th, W.B. Saundero Company.

8.2.e- Ganong, W.F. (1989) Review of Medical Physiology. 9th (Middle East edition) Appleton and Lang.

8.2.f- Periodicals, Web Sites, ... etc.

8-2: SUGGESTED books:

8.3.a- Veterinary Physiology .

8.3.b- Textbook of Medical Physiology. Guyton and Hall, 1996.

8-3: Essential Books

- Animal Physiology. Richard W Hill , Gordon A Wyse , Margaret Anderson (4th Ed) ISBN: 9781605357379 Edition: 4 Paperback Oct 2017
- Principles of Animal Physiology (2016) 3rd edition. Christopher D. Moyes, Patricia M. Schulte
- Principles of Animal Physiology (2018) 3rd edition, Christopher D. Moyes, Patricia M. Schulte
- Eckert Animal Physiology: Mechanisms and Adaptations (1997) 4th Ed, David Randall , Warren Burggren
- Functional Anatomy and Physiology of Domestic Animals, (2017) 5th Edition, William O. Reece, Eric W. Rowe
- Cunningham's Textbook of Veterinary Physiology, 6th Edition - January 3, 2019
- Dukes' Physiology of Domestic Animals, (2015) 13th Edition, William O. Reece (Editor), , Jesse P. Goff , Etsuro E. Uemura
- COMPARATIVE ANIMAL PHYSIOLOGY (2020) 1st Edition, by Philip C. Withers Anatomy and Physiology of Farm Animals, 8th Edition, Anna Dee Fails, Christianne Magee
- Essentials of Animal Physiology, (2007) S. C. Rastogi
- Equine Exercise Physiology (2002), David Marlin, Kathryn J. Nankervis
- Guyton and Hall Textbook of Medical Physiology (Guyton Physiology) (2022) 14th Edition, by John E. Hall PhD , Michael E. Hall MD MSc.

8-2: Recmended books:

- Ruchebusch, Y., Phaneuf, I. and Dunlop, R (1991) Physiology of small and large Animals. B.C. Decker , Inc, Philadelphia, Hamilton.
- Swenson M.J, Reece, W.O. and Comstock (1993) Duke's Physiology of Domestic Animals. 11th edition, publishing Associates a division of Cornell University press. Ithaca and London.
- Gunningham, J. (1992) Text book of Veterinary Physiology. W.B. Saundero Company, Toronto, Montreal, Tokyo.

8-3: Egyptian Knowledge Bank:

- Animal Physiology, Beaver, BV and Höglund, DL. 2016. Academic Press, Elsevier Inc.



- Animal Physiology: An Environmental Perspective, by Patrick J. Butler, J. Anne Brown, et al. | Sep 23, 2020. Academic Press, Elsevier Inc.
- Principles of Animal Physiology, by Christopher Moyes and Patricia Schulte | Jan 15, 2015. Academic Press, Elsevier Inc.
- Animal Physiology: From Genes to Organisms, by Lauralee Sherwood, Hillar Klandorf, et al. | Jan 1, 2012. Academic Press, Elsevier Inc.
- Anatomy and Physiology of Farm Animals, by Anna Dee Fails and Christianne Magee | Jul 11, 2018. Academic Press, Elsevier Inc.
- Veterinary Anatomy Coloring Book: Animal Anatomy and Veterinary Physiology Coloring Book Vet Tech, Summer Sparks | Sep 22, 2020. Academic Press, Elsevier Inc.
- Functional Anatomy and Physiology of Domestic Animals, by William O. Reece and Eric W. Rowe | Aug 14, 2017, Academic Press, Elsevier Inc.
- Introduction to Animal and Veterinary Anatomy and Physiology, by Victoria Aspinall and Melanie Cappello | Dec 12, 2019. Academic Press, Elsevier Inc.
- Eckert Animal Physiology: Mechanisms and Adaptations, by David Randall | Nov 1, 2001, Academic Press, Elsevier Inc.
- Animal Physiology: Adaptation and Environment, by Knut Schmidt-Nielsen | Apr 10, 1997. Academic Press, Elsevier Inc.
- Das, DN. Paul, D. and Mondal, S. 2022. Emerging Issues in Climate Smart Livestock Production. Biological Tools and Techniques. Academic Press, Elsevier Inc.

8.4. Scientific Journals

- Animals
- Animal physiology and biochemistry
- Cells
- Stress
- Veterinary sciences
- Scientific report
- .frontier in veterinary science
- Journal of Animal Science.
- Livestock Production Science.
- British Journal of Animal Science.

8.5. Scientific websites

- The Egyptian Knowledge Bank: <https://www.ekb.eg/web/guest/home>
- <https://animalphys4e.sinauer.com/>
- <https://teachmephysiology.com/>
- <https://www.nature.com/subjects/animal-physiology>
- <https://sites.msudenver.edu/haysc/biology-courses/animal-physiology-bio-3360/>
- <https://www.acsedu.com/Courses/animal-biology-animal-husbandry-i-599.aspx>
- <https://animalphys4e.sinauer.com/quiz/>
- <https://askabiologist.asu.edu/explore/animal-physiology>
- <https://www.sinauer.com/media/wysiwyg/tocs/AnimalPhysiology3.pdf>
- <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/animal-physiology>
- <https://library.ivytech.edu/c.php?g=869309&p=6239318>
- DeLaval Dairy Supply. <http://www.delaval.com/en/-/Dairy-knowledge-and-advice/>
- Lactation Biology: <http://classes.aces.uiuc.edu/ansci308/index.html>
- Heat Detection and Timing of Insemination for Cattle. Penn State, College of Agricultural Sciences, Cooperative Extension. <https://extension.psu.edu/heat-detection-and-timing-of-insemination-for-cattle> accessed 08/09/2017.
- National Dairy Database: <http://www.inform.umd.edu:8080/edres/topic/agr/ndd>
- The Babcock Institute: <http://babcock.cals.wisc.edu>



- WWW Virtual Library for Dairy Production* (Oklahoma). <http://www.ansi.okstate.edu/library/dairy/>
- US Dairy Export Council: <http://www.usdec.org/about/whoweare.htm>
- The International Dairy Federation (IDF): <http://www.fil-idf.org/>
- Managing of dairy heifers: <http://www3.das.psu.edu/dcn/calfmgt/385/index.html>
- Management Practices Associated with High-Producing U.S. Dairy Herds (USDA): http://www.aphis.usda.gov/vs/ceah/cahm/Dairy_Cattle/drymgmt.htm
- A beginners guide to raising sheep <http://www.sheep101.info/201/feedwaterequip.html>
<http://www.thepoultrysite.com/>

Intended learning out comes of each topic in this course:

TOPIC	K.U (a)	LS (b)	P.P.S (c)	G.T.S (d)
Hormones and hormonal cycle	A1,a2	B2	-----	D1-D4
Accessory sexual organs and their functions	A3,a4	B1	-----	D1-D4
Male reproductive hormones and their function	A3,a4	B2	-----	D1-D4
Semen composition, collection and abnormalities	,a4	B1	-----	D1-D4
Factors affecting male fertility	a4	B2	-----	D1-D4

Evaluation Intended learning out comes

Methods	I.L.O.S Evaluation			
	Knowledge	Intellectual	Practical	General
Written examination	A1.A2.A3.A4.	B1-b2	-----	D3-D4
Oral examination	A1.A2.A3.A4	B1-b2	-----	D3-D4

Course Coordinator:
Prof. Dr. Michel Fahmy saad

Head of Department:
Prof.dr. Shawky Abdelhady Mahmoud



Course Matrix for achievement of Intended Learning Outcomes

Topics	Hours	Knowledge & Understanding(a)				Intellectual Skills(b)				Practical (c)			General & Transferable Skills(d)			
		1	2	3	4	1	2	3	4	1	2	3	1	2	3	4
Hormones and hormonal cycle	10	✓	✓	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓
Accessory sexual organs and their functions	8	-	-	-	✓	✓	✓	-	-	-	-	-	✓	✓	✓	✓
Male reproductive hormones and their function	10	-	-	✓		✓	✓	-	-	-	-	-	✓	✓	✓	✓
Semen composition, collection and evaluation	10	✓	✓	-	-	✓	✓	-	-	-	-	-	✓	✓	✓	✓
Factors affecting male fertility	10	-	-	-	✓	✓	✓	-	-	-	-	-	✓	✓	✓	✓



COURSE SPECIFICATION (2021 / 2022)

1 - Basic Information:

Code number:.....

Course title: Biochemistry

Academic Year: **Diploma of artificial insemination**

Total teaching hours: 96 hrs

Lectures: 48 hrs (48 weeks- 1hr/week)

Practical: 48 hrs (48 weeks- 1hr/week)

2 - OVERALL AIMS OF THE COURSE:

By the end of this course, the student should acquire the concepts, principles and skills related to Physical and biochemical properties of semen and the biochemical methods used for the evaluation of its quality. Student will be familiar with types, mode of action, assays and metabolism of hormones related to fertility. Moreover, energy metabolism in spermatozoa will be considered. Factor affecting semen quality will be mentioned

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- a.1. Define the biochemical basic of seminal plasma constituents
- a.2. Memorize types and mode of action of hormones related to fertility
- a.3. Explain energy metabolism in spermatozoa.
- a.4. Discuss vitamin and menials affecting male fertility
- a.5. Recall immunoassayed for diagnosis of gonads dysfunction

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- b.1. Interpret correctly the biochemical analytical data of hormones levels in different biological samples.
- b.2. Differentiate between biochemical dysfunction of different hormones
- b.3. Comprehend the research papers in biochemistry of semen

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- c.1. Perform the biochemical analysis of hormones of different samples
- c.2. Examine and evaluate biochemical composition of semen
- c.3. Write efficiently the laboratory professional reports about hormonal analysis.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- d.1. Communicate effectively with his professors, and collages.
- d.2. Utilize different sources of knowledge and information
- d.3. Use information technology to serve the professional practice.
- d.4. Manage time efficiently.

4 - COURSE CONTENTS:

Topic	No. of hours		
	Lectures	Practical	Total
1. Biochemical composition of seminal palsma	10	10	20
2. Hormones related to fertility	14	12	26



3. Vitamines related to fertily	6	6	12
4. Energy metabolism in spermatozoa	12	10	22
5. Biochemical diagnosis of gonads dysfunction.	8	10	18
Total	48	48	96

5- TEACHING & LEARNING METHODS:

* **Advanced lectures:** PowerPoint presentations including videos, and whiteboard
Discussion and brain storming

* **Practical sessions:**

* **Self-Learning activities:** Mini reviews from the web and the library

Making individual reports about poultry or dairy operations

* **Distance Teaching and Learning:** Using the Microsoft Teams platform, when necessary, such as during COVID-19 pandemics or when onsite (face-to-face) education is halted due to weather emergencies or other reasons. Distance teaching may be offered synchronous or non-synchronous.

Teaching and Learning Methods	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Advanced lectures*	a1 to a4	b1 to b3		d1, d4
Practical sessions		b1 to b3	c1 to c3	d2, d4
Self-Learning activities				d2, d3, d4
Distance Teaching and Learning	a1 to a4	b1 to b3	c1 to c3	d1 to d4

*Lectures and some practical topics may be offered face to face or via distance teaching and learning.

6. METHODS FOR STUDENTS With limited capabilities:-

• No disabled students until now, but if present the methods are:-

*Activation of office hours.

*Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination	Activities
7.b time	At the end of the academic year	At the end of the academic year	At the end of the academic year	All over the academic year
7.c grads	25	10	10	5

6.1. Methods	7. Student Assessment			
	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Written exams	a1 to a4	b1 to b3		d4
Practical exams			c1 to c3	d2, d3
Oral exams	a1 to a4	b1 to b3		d1
Student activities	a1, a4,			d1 to d4

KU, knowledge and understanding; IS, intellectual skills; PPS, practical and professional skills; GTS, general and transferable skills.



8. LEARNING AND REFERENCE MATERIALS:

8-1: Essential Books

- Nelson, David L., and Michael M. Cox. 2017. Lehninger Principles of Biochemistry. 7th ed. New York, NY: W.H. Freeman.
- Murray, R.K., Granner, D.K, Mayes, P.A. and Rodwell, V.W. (2006) Harper's Biochemistry. 27th Edition, McGraw-Hill, Health Profession Division, New York, 225.
- Ferrier, Denise R. (2017). Lippincott Illustrated Reviews: Biochemistry (7th edition). Philadelphia, PA: Wolters Kluwer Health.
- VOET, D., & VOET, J. G. (2011). Biochemistry. Hoboken, NJ, John Wiley & Sons.
- Voet, D., Voet, J. G., & Pratt, C. W. (2016). Fundamentals of biochemistry (5th ed.). John Wiley & Sons.
- Berg, J. M., Tymoczko, J. L. and Stryer, L. Biochemistry. Freeman, 7th edition, 2011
- Lodish, H., Berk, A., Zipursky, S. L., Matsudaira, P., Baltimore, D. and James Darnell, J. Molecular Cell Biology , Freeman, 7th edition 2013
- Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K. and Walter P. Molecular Biology of the Cell. Garland Science, 6th edition 2014
- Mathews, C. K. & Van Holde, K. E. & Ahern, K. G. Biochemistry. Addison Wesley, 4th edition, 2012. (
- Voet, D. & Voet, J. G. Biochemistry. 4th edition, 2013.
- Voet, D., Voet, J. G. & Pratt, C. W. Principles of Biochemistry. Wiley, 4th edition, 2013.

8-2: Recomeded books:

- Burtis, Ashwood and bruns (2006) clinical chemistry and molecular diagnostics 4th ed., USA, Elsevir.
- 8.2d Kaneko, Harvey and Bruss (2008) Clinical Biochemistry of Domestic Animals, 6th ed. Elsevir Inc.
- Devlin, Thomas M. 2011. Textbook of biochemistry: with clinical correlations. Hoboken, NJ: John Wiley & Sons.
- James H. Nichols, Carol A. Rauch, Michael Laposata 2013 Clinical Chemistry Quality in Laboratory Diagnosis (Kindle Edition)

8-3: Egyptian Knowledge Bank:

- Michael M, Srivastava R and Deans K (2019): Clinical Biochemistry: An Illustrated Colour Text, 6th Edition, Elsevier Ltd.
- Baynes J and Dominiczak M (2019): Medical Biochemistry, 5th Edition, Elsevier Ltd
- Koel M and Kaljurand M (2019): Green Analytical Chemistry: Edition 2, Royal Society of Chemistry.
- McPherson RA and Pincus MR (2017): Henry's Clinical Diagnosis and Management by Laboratory Methods, 23rd Edition, Elsevier Ltd.
- Donald V and Judith G (2011): Biochemistry, 4th Edition, Publisher: Wiley.

Scientific Journals

- International Journal of Biochemistry and Biophysics
- International Journal of Biochemistry and Molecular Biology
- International Journal of Biochemistry, Biophysics & Molecular Biology
- International Journal of Biological and Chemical Sciences
- Biochemistry



Kafrelsheikh University
Faculty of Veterinary Medicine



- Journal of molecular biochemistry

Scientific websites

- **The Egyptian Knowledge Bank:** <https://www.ekb.eg/web/guest/home>
- American Society for Biochemistry and Molecular Biology (ASBMB) <https://www.ascb.org/>
- American Society for Cell Biology (ASCB) <https://www.asbmb.org/>
- Biochemical Society (BS)
- <https://www.biochemistry.org/>

Course Coordinator

Head of Department

Dr. Doaa Abdulla Dorgham

Prof. Dr. Samir Ahmed ElShazly



Course Matrix for achievement of Intended Learning Outcomes

Topics	Hours	Knowledge & Understanding					Intellectual Skills			Practical & Professional Skills			General & Transferable Skills				
		1	2	3	4	5	1	2	3	1	2	3	1	2	3	4	
1. Biochemical composition of seminal plasma	20	✓					✓		✓		✓	✓		✓	✓	✓	✓
2. Hormones related to fertility	26		✓				✓		✓		✓	✓	✓	✓	✓	✓	✓
3. Vitamines and meniral related to fertily	12				✓				✓		✓	✓		✓	✓	✓	✓
4. Energy metabolism in spermatozoa	22			✓					✓			✓		✓	✓	✓	✓
5. Biochemical diagnosis of gonads dysfunction.	18					✓	✓				✓	✓	✓	✓	✓	✓	✓



Kafrelsheikh University
Faculty of Veterinary Medicine



Kafrelsheikh University
Faculty of Veterinary Medicine
Department of Bacteriology, Mycology
and Immunology

Program Specification for Master Degree

(2021 - 2022)

Program Title:

Master of The Veterinary Science
(Microbiology)



A- Administrative information:

- 1- **Awarding Body:** Kafrelsheikh University
- 2- **Teaching Body:** Faculty of Veterinary Medicine
- 3- **Department responsible:** Bacteriology, Mycology and Immunology
- 4- **Program Title:** Microbiology
- 5- **Final award:** Diploma Degree
- 6- **Registration period:** one year
- 7- **Program Co- coordinator:** Prof. Dr.: Amged ahmed mowaed

B- Professional information:

1- Aim of the Program:

- To provide the graduates with the advanced veterinary medical knowledge and skills essential for the Diploma of animal microbiology of physiology and necessary for further training and practice in the field of Animal Microbiology. Also, provides graduates the opportunity to develop communication and teaching skills and the experience of scientific research.
- To evolve the ability of graduates to be involved in recent techniques and research tools in the field of Microbiology of Animals.
- To provide the graduates with the most recent knowledge in science and applied Microbiology.
- To reveal an awareness of the connections between disciplines and to evolve the ability to engage with scientific literature. Also, to review and present their own research data for the promotion of the animal health.
- To permit graduates to develop practical research project.
- To qualify graduates to achieve competency in modern laboratory and practical technology.

2- Academic standards:

Academic reference standards (ARS) adopted by the faculty committee No 1(14/9/2014)

3-Graduate attributes:

At the end of the program, graduate must be able to:



- 1) Apply the gained specific knowledge in animal microbiology.
- 2) Identify the microbiological problems and suggest solutions of the focus area.
- 3) Apply and use analytical methods in the area of animal microbiology.
- 4) Apply efficiently the basics and methodologies of scientific research with the use of its different tools.
- 5) Communicate effectively and lead work team through professional scale.
- 6) Make decision under different professional situations
- 7) Use of the available resources efficiently
- 8) Be aware with the ongoing problems and modern concepts in the area of animal microbiology.
- 9) Be aware with his role in society development and community preservation.
- 10) Reflect the commitment to act with integrity, credibility, and the rules of profession
- 11) Realize the importance of self and life-long learning and progress.
- 12) Master an appropriate domain in specialized professional skills and use modern technology to serve professional practice.

4-Programme outcomes [intended learning outcomes (ILOs)]

a. Knowledge and understanding:

On successful completion of this programme, graduate will be able to:

- a.1. Understand the basics of microbiology, mycology, immunology, and virology.
- a.2. Discuss the host parasite relationship and their immune response.
- a.3. Realize with modern applied methodologies in the field of animal microbiology and virology.
- a.4. Recognize the legal and ethical basics in the field of laboratory (bacteriology and virology) safety.
- a.5. Identify the principles and basics of quality assurance in the area of practical animal microbiology and virology.
- a.6. Recognize the basics and ethics of research on animal model at microbiology and virology lab.

b. Intellectual skills:

At the end of the program, graduate must be able to:



b.1. Recognizes the most important techniques used in the field of microbial and viral isolation and identification and field of immunology.

b.2. Interpretation of the results of various microbial (bacterial and viral) and immunological tests.

b.3. Evaluate in a scientific way the results of microbial (bacterial and viral) tests in accordance with reference values as well as immunological test results.

b.4. Write a scientific reports on the results of microbial and immunological tests used in the field of microbiology (bacteriology and virology) and immunology.

b.5. Realize based on scientific basis the final decision of the laboratory isolation and identification of microbiology (bacterial and viral) and immunology.

b.6. Realize the impact of microbiology results on animals and environment.

c. Practical and professional skills:

At the end of the programme, graduate must be able to:

c.1. Recognize the basic and recent professional skills (bacteriology, mycology, immunology and virology).

c.2. Evaluate existing materials and methods in the area of experimental animal microbiology and analysis to their own research project and evaluating microbiological reports.

c.3. Perform experiments microbiology and analyze different methods and correlate between them.

c.4. Write professional and conclusive report about experimental animals in research design.

d. General and transferable skills:

At the end of the programme, graduate must be able to:

d.1. Communicate effectively with his professors, collages and animal owner(s).

d.2. Utilize different sources of knowledge and information.

d.3. Set tools and indicators for education and assessment of the self-performance.

d.4. Use information technology to serve the professional practice.

d.5. Demonstrate an ability to learn independently for a career of lifelong learning.

d.6. Demonstrate interpersonal skills and team working ability.

d.7. Manage time efficiently.

d.8. Assess himself and identify his personal educational needs.



5. Program structure

a. Program duration (years):

- Diploma of full calendar year from December to November.

b. Program courses:

- Four courses are given for teaching diploma of microbiology as follows:

course	Total hours	lecture hours per week	Practical hours per week
Bacteriology	240	3	2
Immunology	192	2	2
Mycology	144	1	2
Virology	192	2	2
Total	768	8	8

6-Teaching and Learning Methods:

The program features a variety of teaching approaches for different intended learning objectives, including lectures, practical and lab sessions and seminars.

7- Student assessment:

The program courses depends on different assessment ways:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills

Assessment of program intended learning outcomes

Tool or method	ILOs			
	K & U (a)	IS (b)	P.P (c)	G.T (d)
Written	1-6	1,2,4,5,6		
Oral	1,3,4	1,3,4		
Practical		1,2	1-4	1-7

8-Marking scale as follow:-

Grade		Percentage
Excellent		> 90
Very good		>80
Good		>70
Pass		>60
Fail	weak	45 to less than 60
	very weak	Less than 45

9-Evaluation of program outcomes

Code	Evaluator	Tools	Sample
1	Postgraduate students	Questioners	20%
2	Stakeholder	Questioners & Open discussion	10
3	Alumni	Questioners	15
4	External examiners	Report	1
5	External evaluators	Report	1

10. Program Admission Requirements:

Applicant must normally satisfy the Faculty of Veterinary Medicine University of kafrelsheikh general entrance and requirement.

- The applicant must have regular attendance in his courses according to the schedule of the faculty.

11. Regulations for progression of program

- a) Registration period for the Diploma in veterinary medicine sciences is one year after the approval date by the Faculty council, and it should not exceed a period of two years.
- b) The student should conduct the courses proposed by both department council and approved by postgraduate and research committee and faculty council (article 32) in regulation law list and the student will entitled to apply for the exam. only after meeting attendance rate for each courses.
- c) The student should pass written, practical and oral exams successfully in all courses, and the grade will be estimated according to in regulation law list.
- d) The Faculty council has the right to deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- e) Registration will be during September of each year.
- f) Failure in or depriving from entering one or more course did not requires reexamination of successful passed courses.

12-Examination Regulations

- a- Time of written exam, 3 hours for each course that has 3 hours or more for lecture / practical /week. **If has less than 3 hours/week, the time of exam, is 2 hours only.**

The final degree of each course which has 3 hours (lecture and practical) per week is **100 and less than 3 hours is 50 degrees and divided into 50% for written exam, and 50% for practical and oral exam**

The program depends on different assessment ways. Course assessment is made of three elements, written, practical and oral exams. These summative assessment measures to extent student are able to demonstrate



Matching program ILOs with ARS - Matrix

Prog ILOs	ARS																	
	K&U (a)				I.S. (b)					P.P. (c)		G.T. (d)						
	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7
K&U	1-2	3,4	5	6														
I.S.					1	2	3	4	5,6									
P.P.										1-3	4							
G.T.												1	2	3,4	6	6	7	8

Program Coordinator

Prof. Dr.: Amged Ahmed Mowaed

Head of department

Prof. Dr.: Ashraf Mohamed Ahmed

Program Specification Matrix

Courses	Total Contact hours/ course	No. of hours / week			K.U (a)						I.S (b)						P.P (c)				G.T (d)											
		Lect.	Lab.	Total	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	1	2	3	4	5	6	7	8				
Bacteriology	240	3	2	5	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x				
Immunology	192	2	2	4	x	x		x	x		x	x	x	x	x		x		x	x		x	x	x	x							
Mycology	144	2	1	3	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x				
Virology	192	2	2	4	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x	x	x	x					
Total	768	8	8	16																												

ARS for Diploma in Microbiology

1) Graduate attributes

At the end of the program, graduate must be able to::

- 13) Apply the gained specific knowledge in animal microbiology.
- 14) Identify the microbiological problems and suggest solutions of the focus area.
- 15) Apply and use analytical methods in the area of animal microbiology.
- 16) Apply efficiently the basics and methodologies of scientific research with the use of its different tools.
- 17) Communicate effectively and lead work team through professional scale.
- 18) Make decision under different professional situations
- 19) Use of the available resources efficiently
- 20) Be aware with the ongoing problems and modern concepts in the area of animal microbiology.
- 21) Be aware with his role in society development and community preservation.
- 22) Reflect the commitment to act with integrity, credibility, and the rules of profession
- 23) Realize the importance of self and life-long learning and progress.
- 24) Master an appropriate domain in specialized professional skills and use modern technology to serve professional practice.

A) Knowledge and understanding

Adopted ARS		NARS (Diploma)	
	<i>By the end of this program the graduate should understand and accommodate the following:</i>		<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Principles of microbial morphology, host parasite relationship, microbial pathogenesis and immune responses		Basics, theories and specific knowledge in educational field and sciences related to professional practice
2)	Principles of laboratory safety and regulations (laboratory biological hazards and protective measures).		Ethical and legal principles related to professional practice
3)	Basics and principles of quality assurance in microbiology		Basics and principles of quality assurance in professional practice in the field of specialization
4)	Effect of microorganisms on the animal health and husbandry		Impact of professional practice on environment and work to preserve and maintain the environment



B) Intellectual skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Identification and analysis of laboratory diagnostic problems in microbiology and arranging them according to their significance	Determination and analysis of professional problems in the field of specialization and arranging them according to priorities
2)	Interpreting results of microbiological, serological, immunological and molecular tests	Solving professional problems in specialization field
3)	Evaluating different laboratory data with normal and reference values and formulating diagnosis after excluding non-specific interpretation	Analytical reading of researches and scientific topics in the field of specialization
4)	Risk Assessment for an item within clinical microbiological laboratory	Risk assessment in professional practice.
5)	Evidence based decisions to deal with laboratory diagnostic problems	Professional decision making using available information

C) Professional and practical skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	the basic practical skills in clinical microbiology (staining, culture and identification)	Applying professional skills in the field of specialization
2)	Writing professional laboratory reports with interpretation of data concerning bacteria, fungi, viruses or immune status of animals.	Writing professional reports

D) General and transferable skill

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>



1)	Effective communication with teaching staff, colleagues and the community	Effective communication
2)	Utilizing information technology in scientific research and publications.	Utilizing information technology to serve development of professional practice.
3)	Updating information and knowledge and exchange it with staff and colleagues.	Self-assessment and determination of personal educational needs.
4)	Identifying and using different sources of information and knowledge in clinical pathology and other related topics	Using different resources to obtain knowledge and information.
5)	Respecting the importance of team work and do good control of time.	Working in team and efficient time management.
6)	Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team	Leading a team in familiar professional contexts.
7)	Using the tools important for self and continuous learning	Self and continuous learning

أولاً: برامج دبلومه الدراسات العليا

١- مواصفات الخريج

خريج برنامج دبلومه الدراسات العليا في أي تخصص يجب أن يكون قادراً على:

١. تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
٢. تحديد المشكلات المهنية و اقتراح حلولاً لها
٣. إتقان المهارات المهنية واستخدام الوسائل التكنولوجية المناسبة في ممارسته المهنية
٤. التواصل و قيادة فرق العمل من خلال العمل المهني المنظمي
٥. اتخاذ القرار في ضوء المعلومات المتاحة
٦. توظيف الموارد المتاحة بكفاءة
٧. الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة
٨. التصرف بما يعكس الالتزام بالنزاهة و المصداقية و قواعد المهنة و تقبل المسائلة و المحاسبة
٩. إدراك ضرورة تنمية ذاته و الانخراط في التعلم المستمر

٢- المعايير القياسية العامة

١ المعرفة و الفهم. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على فهم و استيعاب كل من:

- أ- النظريات والأساسيات والمعارف المتخصصة في مجال التعلم وكذا العلوم ذات العلاقة بممارسته المهنية
- ب- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص
- ج- مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص
- د- تأثير لممارسة المهنية على البيئة و العمل على الحفاظ على البيئة وصيانتها

٢ المهارات الذهنية. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على:



- أ- تحديد و تحليل المشاكل في مجال التخصص و ترتيبها وفقا لأولوياتها
ب - حل المشاكل المتخصصة في مجال مهنته
ج - القراءة التحليلية للأبحاث و المواضيع ذات العلاقة بالتخصص
د - تقييم المخاطر في الممارسات المهنية
هـ - اتخاذ القرارات المهنية في ضوء المعلومات المتاحة

٣ المهارات المهنية. ٢

بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:

- أ - تطبيق المهارات المهنية في مجال التخصص
ب - كتابة التقارير المهنية

٤ المهارات العامة و المنتقلة. ٢

بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:

- أ - التواصل الفعال بأنواعه المختلفة
ب - استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية
ج - التقييم الذاتي و تحديد احتياجاته التعليمية الشخصية
د - استخدام المصادر المختلفة للحصول على المعلومات و المعارف
هـ - العمل في فريق و إدارة الوقت
و - قيادة فريق في سياقات مهنية مألوفة
ز - التعلم الذاتي و المستمر



KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF BACTERIOLOGY, MYCOLOGY AND IMMUNOLOGY

COURSE SPECIFICATION (2021/ 2022)

1 - Basic Information:

Course title: Bacteriology

Code number: -

Academic Year: Postgraduate **DIPLOMA OF MICROBIOLOGY**

Total teaching hours: 240 hrs

Lectures: 144 hrs.

Practical: 96 hrs.

2 - OVERALL AIMS OF THE COURSE:

- Educate students about the basic features of general Bacteriology.
- To familiarize students with the structure of bacterial cell.
- To enable the students to be aware with bacterial growth and factors affecting on it.
- Provide students with an understanding of bacterial pathogenicity.
- To familiarize the students with basic principles of Bacterial genetics.
- To familiarize the students with basic principles of Bacterial resistance to the antimicrobial agents.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1- Illustrate general bacterial morphology, physiology and genetics.
- A2- Describe the host parasite relation and microbial pathogenesis.
- A3- Recognizes the basic feature of general bacteriology.
- A4- Describe the culture, antigenic structure and virulence factor of microorganisms of detrimental role in hypersensitivity.
- A5- Recognize the most important infectious clinical conditions and outline the diagnosis of bacteria that cause such diseases.
- A6- Recognize basic principles of serological diagnosis of bacterial infections.
- A7- Describe the most important methods of decontamination and principles of infection control.
- A8- Describe the basics of antimicrobial sensitivity and resistance.
- A9- Understand the impact of molecular { technology } in microbiology and immunology. —

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:



- B1- interpret results of microbiological, serological and molecular tests.
- B2- Evaluate the microorganism according to standard taxonomy.
- B3- Discover according evidence the causal relationship of microbes and diseases.
- B4- Construct a concise scientific activity according to standard scientific thinking and integrity.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1-Detect the medically important bacteria based on microscopic examination of stained preparations.
- C2- Perform culture media and biochemical tests commonly used for bacterial identification.
- C3- Apply Serological identifications (serotyping) of bacteria using different serological tests.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D 1- Coach and work in groups.
- D 2- Classify different duties.
- D 3- Utilize computer and internet skills.
- D 4- Develop the ethical behavior between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

Topic	Total Hours	Hours For lecture	Hours For practical
Bacterial Morphology	6	6	-
Structure of Bacterial cell	12	12	-
Bacterial growth	8	8	-
Bacterial metabolic products	8	8	-
Virulence and pathogenicity	4	4	-
Bacterial genetics	12	12	-
Genus: <i>Staphylococci</i>	4	4	-
Genus: <i>Streptococcus</i>	6	6	-
Genus: <i>Bacillus</i>	4	4	-
Genus: <i>Clostridium</i>	8	8	-
Genus: <i>Mycobacterium</i>	4	4	-
Genus: <i>Corynebacterium</i>	6	6	-
Genus: <i>Listeria</i>	4	4	-
Genus: <i>Mycoplasma</i>	6	6	-
Genus: <i>Lactobacillus</i>	4	4	-
Genus: <i>Salmonella</i>	8	8	-
Genus: <i>Escherichia</i>	6	6	-
Genus: <i>Pasteurella</i>	6	6	-
Genus: <i>Brucella</i>	6	6	-
Genus: <i>Haemophilus</i>	4	4	-
Genus: <i>Vibrio</i>	6	6	-
Genus: <i>Campylobacter</i>	4	4	-
Genus: <i>Leptospira</i>	8	8	-
Microscope	2	-	2
Sterilization	2	-	2
Disinfection	2	-	2
bacterial media	6	-	6
Isolation of bacteria	6	-	6
Identification of bacteria	6	-	6
Biochemical characters	4	-	4
Antibiotic sensitivity test	4	-	4
Lab. Safety	2	-	2
Lab. Animal pathogenicity	4	-	4
Preparation of bacterial smear	4	-	4
Staining of bacteria	6	-	6
Gram staining	6	-	6
Loefflers Methylene Blue staining	4	-	4
Zieh-Neelsen staining	4	-	4
Staining of Gram positive	12	-	12

bacteria			
Staining of Gram negative bacteria	12	-	12
Total	240	144	96

5- TEACHING & LEARNING METHODS:

1:- Lectures

(using data show and white board, brain storming)

2:- Practical and small group sessions:

1: Practical training

(Practical demonstrations, practice of skills, and discussions)

3:- Self learning

(Computer researches and faculty library visits to prepare essays and presentations)

- Library researches.
- Internet researches.
- Discussion in the researches.

4:- Audiovisual

Powerpoint presentations in lecture halls.

6. METHODS FOR STUDENTS With limited capabilities:-

- Activation of office hours.
- Discussion with them during practical session
- Simplify and re-explain the information theoretically and practically wherever needed .
- Using of illustrated cases.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	At the end of 48 weeks	At the end of 48 weeks	At the end of 48 weeks
7.c grads	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Overhead projections, slides and computer presentations used during teaching.
- Course notes lectures

8-2: Recmended books:

Jawetz, Melnick and Adelberg's *Medical Microbiology*

- Janeway and Travers Immunobiology: The immune system in health and disease

8.3: web sites and jouranlsand so on

- WWW.PubMed.com
- WWW.arabvet.com

- WWW.science direct.com
- WWW.FAO.com
- **Intended learning out comes of each topic**

Topic	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Bacterial Morphology	A1.-A5, A7,A8,A9	B3.B4	-	D3.D4
Structure of bacterhial cell	A1.-A5 A7,A8,A9	B3.B4	-	D3D4.
Bacterial growth	A1.-A5 A7,A8,A9	B3.B4	-	D3.D4
Bacterial metabolic products	A1.-A5 A7,A8,A9	B3.B4	-	D3.D4
Virulence and pathogenicity	A1.-A5 A7,A8,A9	B3.B4	-	D3D4.
bacterial genetics	A1-A5	B3.B4	-	D3.D4
Genus: <i>Staphylococci</i>	A1-A5	B3.B4	-	D3.D4
Genus: <i>Streptococcus</i>	A1-A5	B3.B4	-	.D3.D4
Genus: <i>Bacillus</i>	A1-A5	B3.B4	-	.D3.D4
Genus: <i>Clostridium</i>	A1-A5	B3.B4	-	.D3.D4
Genus: <i>Mycobacterium</i>	A1-A5	B3.B4	-	D3.D4
Genus: <i>Corynebacterium</i>	A1-A5	B3.B4	-	.D3.D4
Genus: <i>Listeria</i>	A1-A5	B3.B4	-	.D3.D4
Genus: <i>Mycoplasma</i>	A1-A5	B3.B4	--	.D3.D4
Genus: <i>Lactobacillus</i>	A1-A5	B3.B4	-	.D3.D4
Genus: <i>Salmonella</i>	A1-A5	B3.B4	-	.D3.D4
Genus: <i>Escherichia</i>	A1-A5	B3.B4	-	.D3.D4
Genus: <i>Pasteurella</i>	A1-A5	B3.B4	-	.D3.D4
Genus: <i>Brucella</i>	A1-A5	B3.B4	-	.D3.D4
Genus: <i>Haemophilus</i>	A1-A5	B3.B4	-	.D3.D4
Genus: <i>Vibrio</i>	A1-A5	.B3.B4	-	.D3.D4
Genus: <i>Campylobacter</i>	A1-A5	B3.B4		D3.D4
Genus: <i>Leptospira</i>	A1-A5	B3.B4	-	.D3.D4
Microscope	-	B1.B2	-	D1.D2.
Sterilization	-	B1.B2	C1	D1.D2.
Disinfection	- (18)	B1.B2	C1, C2, C3	D1.D2
Bacterial media	-	B1.B2	C1, C2, C3	D1.D2.
Isolation of bacteria	-	B1.B2	C1, C2, C3	D1.D2.
Identification of bacteria	-	B1.B2	C1, C2, C3	D1.D2.
Biochemical characters	-	B1.B2	C1, C2, C3	D1.D2.
Antibiotic sensitivity test	-	B1.B2	C1, C2, C3	D1.D2.
Lab. Safety	-	B1.B2	C1, C2, C3	D1.D2.
Lab. Animal pathogenicity	-	B1.B2	C1, C2, C3	D1.D2.

Preparation of bacterial smear	-	B1.B2	C1, C2, C3	D1.D2.
Staining of bacteria	-	B1.B2	C1, C2, C3	D1.D2.
Gram staining	-	B1.B2	C1, C2, C3	D1.D2.
Loefflers Methylene Blue staining	-	B1.B2	C1, C2, C3	D1.D2.
Zieh-Neelsen staining	-	B1.B2	C1, C2, C3	D1.D2.
Staining of Gram positive bacteria	-	B1.B2	C1, C2, C3	D1.D2.
Staining of Gram negative bacteria	-	B1.B2	C1, C2, C3	D1.D2.
Preparation of bacterial smear	-	B1.B2	C1, C2, C3	D1.D2.
Staining of bacteria	-	B1.B2	C1, C2, C3	D1.D2.

Evaluation Intended learning out comes

TOOLS	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	General	
Written examination	A1- A9	B3-B4		D3	50
Oral examination	A1- A9	B3-B4		..D4	25
Practical examination		B1-B2	C1-C2-C3-C4	D1.D2	25

Course Coordinator:

Head of the Department:

(Prof. Dr. Amgad Ahmed Moawad)

(Prof. Dr. Ashraf Mohamed Ahmed)



KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF BACTERIOLOGY, MYCOLOGY AND IMMUNOLOGY

COURSE SPECIFICATION **(2021 / 2022)**

1 - Basic Information:

Course title: Immunology

Code number: -

Academic Year: Postgraduate *DIPLOMA* OF MICROBIOLOGY

Total teaching hours: 192 hrs

Lectures: 96 hrs.

Practical: 96 hrs.

2 - OVERALL AIMS OF THE COURSE:

To provide student with basic knowledge and skills concerning the basic ,applied and molecular immunology, relevant to the susceptibility and response of the host to microorganisms, with special emphasis on the host-pathogen relationship at the cellular and molecular level.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1- Illustrate general structure of the immune system as well as host parasite immunological interaction.

A2- Recognize the basic features of basic, applied and molecular immunology.

A3-Define the structure and functions of the immune system, its beneficial role as well as its detrimental role in hypersensitivity and autoimmunity.

A4- Describe the basic principles of serological diagnosis of bacterial and fungal infections.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- interpret results of serological and molecular tests.

B2- Construct a systematic approach for laboratory diagnosis.

B3- Discover according to evidence the causal relationship of microbes and diseases.

B4- Construct a concise scientific activity according to standard scientific thinking and integrity.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1- Detect the medically important bacteria based on serological examination of serum.

C2- Perform serological Tests: slide agglutination, tube agglutination, precipitation test, complement fixation test, toxin-antitoxin neutralization.

C3- Apply Serological identification (serotyping) of bacteria using different serological tests.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Coach and work in groups.

D2- Classify different duties

D3- Utilize computer and internet skills.

D4- Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPICS	Total hours	Hours for lecture	Hours for practical
Innate immune system	8	8	-
Acquired immunity	10	10	-
Structure of the immune system	10	10	-
Antigens	10	10	-
Immunoglobulins	8	8	-
Humeral Immune response	8	8	-
Cell mediated immune response	10	10	-
Major Histocompatibility	6	6	-
Complement	6	6	-
Hypersensitivity	6	6	-
Autoimmunity	4	4	-
Tumor Immunology	6	6	-
Vaccination	14	-	14
Agglutination test	14	-	14
Precipitation test	14	-	14
Complement fixation test	14	-	14
Toxin antitoxin neutralization test	14	-	14
Fluorescent antibody technique	12	-	12
ELISA test	14	-	14
Total	192	96	96

5- TEACHING & LEARNING METHODS:

1:- Lectures

(using data show and white board, brain storming)



2:- Practical and small group sessions:

1: Practical training

(Practical demonstrations, practice of skills, and discussions)

3:- self learning

(Computer researches and faculty library visits to prepare essays and presentations)

- Library researches.
- Internet researches.
- Discussion in the researches.

4:- Audiovisual

Powerpoint presentations in lecture halls.

6. METHODS FOR STUDENTS With limited capabilities:-

- Activation of office hours.
- Discussion with them during practical session
- Simplify and re-explain the information theoretically and practically wherever needed .
- Using of illustrated cases.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	At the end of 48 weeks	At the end of 48 weeks	At the end of 48 weeks
7.c grads	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Overhead projections, slides and computer presentations used during teaching.
- Course notes lectures

8-2: Recmended books:

Jawetz, Melnick and Adelberg's *Medical Microbiology*

- Janeway and Travers Immunobiology: The immune system in health and disease

8.3: web sites and jounrnland so on

- o http://www.microbe.org/microbes/virus_or_bacterium.asp
- o <http://www.bact.wisc.edu/Bact330/330Lecturetopics>
- o http://whyfiles.org/012mad_cow/7.html
- o <http://www.microbelibrary.org/>

Intended learning out comes of each topic

TOPICS	K.U (a)	LS (b)	P.P.S (c)	G.T.S (d)
Innate immune system	A1, A2 ,A3	B3	-	D3, D4
Aquired immunity	A1, A2 ,A3	B3	-	D3, D4

Structure of the immune system	A1,A2,A3,A4	B3	-	D3, D4
Antigens	A1, A2 ,A3,A4	B3,	-	D3, D4
Immunoglobulins	A1,A2,A3	B3	-	D3, D4
Humeral Immune response	A ,A2,A3	B3	-	D3, D4
Cell mediated immune response	A1,A2,A3	B3	-	D3, D4
Major Histocompatibility	A1,A2,A3	B3	-	D3, D4
Complement	A1,A2,A3	B3	-	D3, D4
Hypersensitivity	A1,A2,A3	B3	-	D3, D4
Autoimmunity	A1, A2 ,A3	B3	-	D3, D4
Tumor Immunology	A2,	B3	-	D3, D4
Vaccination	-	B1,B2	C1,C2,C3.	D1, D2
Agglutination test	-	B1,B2.	C2	D1, D2
Precipitation test	-	B1,B2	C2	D1, D2
Complement fixation test	-	B1,B2	C1,C2,C3	D1, D2
Toxin antitoxin neutralization test	-	B1,B2	C1,C2,C3	D1, D2
Fluorescent antibody technique	-	B1,B2	C2	D1, D2.
ELISA test	-	B1,B2	C1,C2,C3	D1, D2

Evaluation Intended learning outcomes

TOOLS	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	General	
Written examination	A1-A2-A3-A4	B3-B4	-	.D3	50
Oral examination	A1-A2-A3-A4	B3-B4	-	.D4	25
Practical examination	-	B1-B2	C1-C2-C3	D1.D2	25

Course Coordinator:

(Prof. Dr. Ashraf Mohamed Ahmed)

Head of the Department:

(Prof. Dr. Ashraf Mohamed Ahmed)

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF BACTERIOLOGY, MYCOLOGY AND IMMUNOLOGY

COURSE SPECIFICATION (2021 / 2022)

1 - Basic Information:

Course title: **Mycology**

Code number: -

Academic Year: Postgraduate **DIPLOMA OF MICROBIOLOGY**

Total teaching hours: **144 hrs**

Lectures: **48 hrs.**

Practical: **96 hrs.**

2 - OVERALL AIMS OF THE COURSE:

To educate students about the basic feature of general and systematic mycology, with basic principles of serological diagnosis of fungal infections. To familiarize the students with basic principles of molecular biology and biotechnology

3 - INTENDED LEARNING OUTCOMES (I. L.Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1- Illustrate general fungal morphology, physiology and genetics.
- A2- Describe the host parasite relation and microbial pathogenesis.
- A3- Recognizes the basic feature of general and systematic mycology.
- A4- Define the culture, antigenic structure and virulence factor of microorganisms of detrimental role in hypersensitivity.
- A5- List the most important infectious clinical conditions and outline the diagnosis of fungi that cause such diseases.
- A6- Recite the basic principles of serological diagnosis of fungal infections.
- A7- Describe the most important methods of decontamination and principles of infection control.

III-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1- interpret results of microbiological, serological and molecular tests.
- B2 -Evaluate a microorganism as a fungus according to standard taxonomy.
- B3- Discover according evidence the causal relationship of microbes and diseases.
- B4- Construct a concise scientific activity according to standard scientific thinking and integrity.

III-C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1- Detect medically important fungi based on microscopic examination of stained preparations.
- C2- Perform culture media and biochemical tests commonly used for fungal identification.
- C3-Apply Serological identifications (serotyping) of fungi using different serological tests.

III-D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1- Coach and work in groups.
- D2- Classify different duties.
- D3- Utilize computer and internet skills.
- D4- Develop the ethical behavior between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
General Mycology	4	4	-
Classification of fungi	4	4	-
Yeasts	4	4	
Dermatophytes	4	4	-
Aspergillus	4	4	-
Penicillium	4	4	-
Fusarium	4	4	-
Zygomycetes	4	4	-
Mycotoxins	4	4	-
Dimorphic fungi	4	4	-
Fungi of fish	4	4	-
Dematiaceous fungi	4	4	-
laboratory diagnosis of mycotic infections	14	-	14
Direct microscopic of moulds	12	-	12
Staining of moulds	12	-	12
Staining of yeast	14	-	14
Culture characters of yeast	16	-	16
Culture Character of the moulds	14	-	14
Biochemical identification of fungi	14	-	14
Total	144	48	96



5- TEACHING & LEARNING METHODS:

*Lectures

(using data show, white board, overhead projector and brain storming)

*Practical and small group sessions:

Practical demonstrations, practice of skills, and discussions, (practical training)

* Self learning

- (Computer researches and faculty library visits to prepare essays, reports, review articles, and presentations)
- Library researches.
- Internet researches.
- Discussion in the researches.

* Audiovisual

Data show & projectors (slide& overhead) in the practical Vet. Laboratory.

6. METHODS FOR STUDENTS With limited capabilities:-

- Discussion with them during practical session.
- Theoretical and practical teaching suitable for people with limited capacity.
- Simplify and re-explain the information theoretically and practically wherever needed .
- Using of illustrated cases.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	At the end of 48 weeks	At the end of 48 weeks	At the end of 48 weeks
7.c grads	50	20	30

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Overhead projections, slides and computer presentations used during teaching.
- Course notes lectures

8-2: Recmended books:

- Jawetz, Melnick and Adelberg's Medical Microbiology
- Janeway and Travers Immunobiology: The immune system in health and disease

8.3: web sites and jouranlsand so on

- asmnews@asmusa.org
- <http://www.phage.org/black09.htm>
- http://www.microbe.org/microbes/virus_or_bacterium.asp
- <http://www.bact.wisc.edu/Bact330/330Lectgretopics>

Intended learning out comes of each topic

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
General Mycology	A1,A4	B3,B4	-	D3,D4
Classification of fungi	A1	B3,B4	-	D3,D4
Yeasts	A4,A5	B3,B4	-	D3,D4
Dermatophytes	A4,A5	B3,B4	-	D3,D4
Aspergillus	A2,A6	B3,B4	-	D3,D4
Penicillium	A3,A6	B3,B4	-	D3,D4
Fusarium	A1,A5	B3,B4	-	D3,D4
Zygomycetes	A1	B4,B3	-	D3,D4
Mycotoxins	A5,A7	B3,B4	-	D3,D4
Dimorphic fungi	A1,A5	B3,B4	-	D3,D4
Fungi of fish	A5,A7	B4,B3	-	D3,D4
Dematiaceous fungi	A1	B4,B3	-	D3,D4
laboratory diagnosis of mycotic	-	B1,B2	C1,C2,	D1,D2
Direct microscopic of moulds	-	B1,B2	C1,C2	D1,D2
Staining of moulds	-	B1,B2	C1,C2	D1,D2
Staining of yeast	-	B1,B2	C1	D1,D2
Culture characters of yeast	-	B1,B2	C1,C2,	D1,D2
Culture Character of the moulds	-	B1,B2	C1,C2,	D1,D2
Biochemical identification of fungi	-	B1,B2	C1,C2	D1,D2

Evaluation Intended learning out comes

TOOLS	I.L.O.S Evaluation				Marks allocated
	Knowledge	intellectual	Practical	General	
Written examination	A1.-A7.	B3,B4.	-	D3	50
Oral examination	A1.-A7	.B3.B4	-	D4	20
Practical examination	-	B1,B2	C1.C2.C3.C4	D1,D2	30

Course Coordinator:

Head of the Department:

(Prof. Dr. Salwa Mahmoud Helmy)

(Prof. Dr. Ashraf Mohamed Ahmed)



KAFR ELSHEIKH UNIVERSITY
FACULTY OF VETERINARY MEDICINE
DEPARTMENT OF VIROLOGY

Course specification
(2021 / 2022)

1 - Basic Information:

Code number.....

Course title: **Virology**

Academic Year: *Diploma of Microbiology*

Total teaching hours: 192. hrs

Lectures: 96hrs

Practical: 96hrs

2 - OVERALL AIMS OF THE COURSE:

- To educate students about the virological definitions and concepts as well as the systematic virology
- Provide students with an understanding of the immune response strategies to viral infection in relation to virus pathogenesis.
- To familiarize students with the infectious diseases of viral origin and their etiological viruses.
- To enable the students to diagnose different virological cases through practice the principles of sampling , viral cultivation , isolation.and serological identifications
- To familiarize the students with basic principles of molecular virology and biotechnology and their clinical implications.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

state the unique viral characters and structural components (morphology, genome

A1 organization, symmetry and genetics , Describe the host viral relationship and viral pathogenesis

A2 Explain the virus host relationship and immune evasion strategies .

A3 Recognize the serious viral infectious clinical conditions and determine the specific diagnosis strategies in order to control such cases

A4 memorize the uses and application of different viral vaccine strategies(attenuated , inactivated and genetic manipulated vaccine)

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1 Appreciate the risk and biological hazard of handling and use of infectious viruses on community and environment as a part of their ethical heritage
- B2 relate the virus according to international taxonomy and nomenclature of viruses,
- B3 select the most appropriate and cost-effective tool leading to the identification of the causative viral agents.
- B4 Assise the results of virological, serological and molecular tests

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to

- C Perform the good laboratory practices and bio-safety precautions (Biosafety level, I, II, III) 1 laboratory), .
- C Model basic principles for virus sampling , isolation via embryonated chicken egg 2 inoculation and cell culture ,
- C Analyze the different strategies of viral titration(plaque assay and end point) , Prepare 3 Serological identification of viruses using different serological tests as CFT ,AGPT ,HI ,and FAT and modern molecular techniques as PCR and phylogenetic analysis of sequenced data .

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1-** Experience in team work and critical analyses of diseases cases , develop the ethical behaviors between students and staff members as well as among the students themselves.
- D2-** Use the different computer skills ,classify different duties,how to make a research or power point .
- D3-** Work under stress and can solve large number of virological problems.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Science of virology	16	8	8
	(29)		

Molecular biology of viruses	16	8	8
Virus replication	16	8	8
Virus pathogenesis	16	8	8
Virus control	16	8	8
Virus evolution and emergence	16	8	8

Immune response to virus infection	8	4	4
DNA Viruses	16	8	8
- RNA viruses	16	8	8
Paramyxovirida Rhabdoviridae Filoviridae Orthomyxoviridae Bunyaviridae	24	12	12
Coronaviridae Picornavirudae Togaviridae Astrovirida - Flaviviridae	24	12	12
Subviral agents	4	2	2
Total	192	96	96

5- TEACHING & LEARNING METHODS:

*Lectures

(using data show, white board and brain storming)

*Practical and small group sessions:

Practical training.

(Practical demonstrations, practice of skills, and discussions)

* Self learning

Computer researches and faculty library visits prepare essays and presentations.

- Library researches.
- Internet researches.



- Discussion in the researches.
- Preparation of scientific reports.
- Virological drawing.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
- *Activation of office hours.
- *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	At the end of the yaer	At the end of the yaer	At the end of the yaer
<u>7.c grads</u>	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- **Department notes:** available for students to purchase from the department.

8-2: Recmonded books:

- 8.2. . Principles of Virology (2 volumes)
- Fields Virology book (2 volumes)
- Veterinary Virology (1 volume)
- Virology a laboratory Manual

8.3: web sites and jouranlsand so on

- Intrnational of veterinary information services (IVIS)

<http://www.virology.net/>

<http://www.virology.net/garryfavweb2.html>

<http://www.virology.net/courseware.html>

- o asmnews@asmusa.org
- o <http://www.phage.org/black09.htm>
- o http://www.microbe.org/microbes/virus_or_bacterium.asp
- o <http://www.bact.wisc.edu/Bact330/330Lecturetopics>
- o http://whyfiles.org/012mad_cow/7.html

- o <http://www.microbelibrary.org/>
 - o <http://www.hepnet.com/hepb.htm>
 - o http://www.tulane.edu/~dmsander/Big_Virology/BVHomePage.html
 - o <http://www.mic.ki.se/Diseases/c2.html>
 - o <http://www.med.sc.edu:85/book/welcome.htm>
- http://www.biology.arizona.edu/immunology/microbiology_immunology.

Intended learning out comes of each topic

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Science of virology	A1-A2	B1-B3-	C1-C2	D1-D2
Molecular biology of viruses	A1-A2	B1-B3	-C1-C2- C3	D1-D2-D3
Virus replication	A1-A2-A3-A4	B3B4-	C1-C2-	D1-D2- -D3
Virus host interaction	A2-A4	1B-B3	C3-C1	D1-D2
Virus pathogenesis and oncogenesis	A2-A3-A4-A1-	B3-B4	-C2-C3-	D1- -D3
Virus control ad vaccination	A3-A4	B3-B4- B2-	C1-C2- C3-	D2-D3
Antiviral chemotherapy	A1-A4	B1-B2	C1-C2-	D2-D3
Virus evolution and emergence	A1-A2-A4-	B3-B4	C1-C2- C3-	D1-D2-D3
Classification of viruses	A2-A3	B3-B4 B1	C1-C2-C3	D1- -D3
-Paramyxovirida- Rhabdoviridae Filoviridae - Orthomyxoviridae Bunyaviridae - Coronaviridae Picornavirudae - Togaviridae Astroviridae -Flaviviridae	A2-A3-A4	B3-B4 B1	C1-C2- C3-	D1-D2-D3
DNA families Herpesviridae, Adenoviridae, Poxviridae	A2-A3-A4-A1	B1-B2- B3-B4	C1-C2- C3-	D1-D2-D3

Circoviridae ,				
Subviral agents	A2-A3-	B2-B3	-C2-C3-	-D2-D3

Evaluation Intended learning out comes

Assessment	ILOs			
	Knowledge and understanding	Intellectual	Professional and practical	General and transferable
Practical exam		-B3-	C1-C2-C3-	D2-D3
Oral exam	A1-A2-A3-A4-	B2-B3		D1
Written exam	A1-A2-A3-A4-	B1-B2-B3-B4	-	D1

Course Coordinator:

Dr. Noura Fysal

Head of Department

Prof. Dr. Basoni Heliel



Kafrelsheikh University
Faculty of Veterinary Medicine



Kafrelsheikh University

Faculty of Veterinary Medicine

Department of Animal medicine

Program Specification for Master Degree

(2021 - 2022)

Program Title:

Master of The Veterinary Science
(Farm Animal Diseases)



A- Administrative information:

- 1- Awarding Body:** Kafrelsheikh University
- 2- Teaching Body:** Faculty of Veterinary Medicine
- 3- Department responsible:** Animal medicine
- 4- Program Title:** Farm Animal Diseases
- 5- Final award:** Diploma Degree
- 6- Registration period:** one year
- 7- Program Co-ordinator:** Prof. Dr. Medhat Nassif

B- Professional Information

1- Programme Aims

- 2- Provide advanced skills of diagnosis and treatment of the most common diseases affecting farm animals, particularly large and small ruminants.
- 3- Enhance the self-learning skills via conducting internet researches concerning these diseases and introduce these researches via interactive presentation with staff members of the department.
- 4- Develop the critical thinking of the students by giving assignments in the form of recent research papers concerning diseases of the newly-born animals to give interpretation and suggestion for improvement.
- 5- Allow students to skillfully use the recent diagnostic tools for diagnosis, write a professional prescription and interpret the reports.

2- Academic standards:

Academic reference standards (ARS) adopted by the faculty committee No 1(14/9/2014)

3-Graduate attributes:

Upon successful completion of the program, the graduate has the ability for:

1. Application of the gained specific knowledge in farm animal (ruminant, small ruminant and equines) internal medicine, infectious and noninfectious, nutritional requirements of farm animals and main management practice of farm animals.
2. Understanding the different diseases and health problems affecting the farm animal and suggest modern solutions and vision to it and be aware with the ongoing problems and modern concepts in the area of diagnosis, treatment and control of farm animals diseases.



3. Application of analytical methods in the area of diagnosis, treatment and control of farm animal diseases and disorders.
4. Effective communication and lead work team during the diagnosis, treatment or control farm animal diseases and disorders
5. Taking Decision by treatment or destruction of the farm animal under the available situation and knowledge.
6. Effective Use of the available resources and data for diagnosis and prevention of different diseases problems.
7. Awareness with his role in society development and community preservation.
8. Reflecting the commitment to act with integrity, credibility, and the rules of profession.
9. Realizing the importance of self and life-long learning and progress in new diseases, new diagnostic and new treatment and preventive tools.

4- Intended Learning Outcomes (ILOs)

a- Knowledge and Understanding:

By the end of this program the graduate should be able to:

- a.1. Define basic principles and practice in the field of farm animals' diseases.
- a.2. Recognize the ethical and legal principles for professional practice in the field of Farm animal medicine and infectious diseases.
- a.3. Apply efficiently the standards of quality standards in the diagnosis, treatment and prevention of Farm animal diseases.
- a.4. Identify the influence of diagnosis, treatment and prevention of farm animal diseases on surrounding environment and human and animal health

b- Intellectual Skills

By the end of this program the graduate should be able to:

- b.1. Determine different disorders and disease of farm animal.



- b.2.** Solve diagnostic problems of farm animal diseases based of on the clinical and laboratory findings.
- b.3.** Analyze scientific papers concerning farm animal diseases.
- b.4.** Assess risk for risk factors affecting the farm animal diseases.
- b.5.** Choose between medical and surgical interference to deal with farm animal diseases based on available data.

c- Professional and Practical Skills

By the end of this program the graduate should be able to:

- c.1.** Master the basic practical of diagnosis, treatment and control of farm animal diseases.
- c.2.** Write professional reports about different cases and problems of farm animal diseases.

d- General and Transferable Skills

By the end of this program, the graduate should be able to:

- d.1.** Communicate efficiently with teaching staff, colleagues and the community
- d.2.** Utilize information technology in scientific research and publications.
- d.3.** Update information and knowledge and exchange it with staff and colleagues.
- d.4.** Identify and use different sources of information and knowledge in Farm Animal Diseases and other related topics.
- d.5.** Respect the importance of team work and do good control of time.
- d.6.** Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team.
- d.7.** Use the tools important for self and continuous learning.

5- program structure.

a- Program duration (years): 1 years.

b- Program courses:

	<u>Total hours</u>	<u>Lecture hours/week</u>	<u>Practical hours/week</u>
General animal medicine	192	2	2



Infectious diseases	192	2	2
Clinical Pharmacology	96	1	1
Animal nutrition	96	1	1
Pathology	96	1	1
Parasitology	96	1	1
Total	786	8	8

6-Teaching and Learning Methods:

The program features a variety of teaching approaches for different intended learning objectives, including lectures, practical and lab sessions, field visits and seminars.

7- Student assessment:

The program courses depend on different assessment ways:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills

Assessment of program intended learning outcomes

Tool or method	ILOs			
	K & U (a)	IS (b)	P.P (c)	G.T (d)
Written	1-4	1,2,3,4		1-7
Oral	1-4	1,3		1-7
Practical		1,2	1-2	1-7

8-Marking scale as follow:-

Grade	Percentage
Excellent	> 90
Very good	>80
Good	>70



Pass		>60
Fail	Weak	45 to less than 60
	very weak	Less than 45

9-Evaluation of program outcomes

Code	Evaluator	Tools	Sample
1	Postgraduate students	Questioners	20%
2	Stakeholder	Questioners & Open discussion	10
3	Alumni	Questioners	15
4	External examiners	report	1
5	External evaluators	report	1

10. Program Admission Requirements:

Applicant must normally satisfy the Faculty of Veterinary Medicine University of kafrelsheikh general entrance and requirement.

- The applicant must have regular attendance in his courses according to the schedule of the faculty.

11. Regulations for progression of program

- Registration period for the Diploma in veterinary medicine sciences is one year after the approval date by the Faculty council, and it should not exceed a period of two years.
- The student should conduct the courses proposed by both department council and approved by postgraduate and research committee and faculty council (article 32) in regulation law list and the student will entitled to apply for the exam. only after meeting attendance rate for each courses.
- The student should pass written, practical and oral exams successfully in all courses, and the grade will be estimated according to in regulation law list.



- d) The Faculty council has the right to deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- e) Registration will be during September of each year.
- f) Failure in or depriving from entering one or more course did not requires reexamination of successful passed courses.

12-Examination Regulations

- a- Time of written exam, 3 hours for each course that has 3 hours or more for lecture / practical /week. **If has less than 3 hours/week, the time of exam, is 2 hours only.**

The final degree of each course which has 3 hours (lecture and practical) per week is **100 and less than 3 hours is 50 degrees and divided into 50% for written exam, and 50% for practical and oral exam**

Course coordinator

Prof. Dr. Medhat Nassif
Prof. Dr. Magdy Al-Gaabary

Head of department

Prof. Dr. Ismail Ismail Ibrahim



Matching program ILOs with ARS - Matrix

Prog. ILOs	ARS																	
	K&U (a)				I.S. (b)					P.P. (c)		G.T. (d)						
	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7
K&U	1	2	3	4														
I.S.					1	2	3	4	5									
P.P.										1	2							
G.T.												1	2	3	4	5	6	7

Program Specification Matrix

Diploma in Farm Animal Diseases

Courses Name	Total Contact hours/ course	No. of hours / week			K.U (a)				I.S (b)					P.P (c)		G.T (d)							
		Lect.	Lab.	Total	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7	
Medicine	192	2	2	4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Infectious Diseases	192	2	2	4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Animal nutrition and nutritional deficiency	96	1	1	2	x		x		x	x	x				x	x	x	x	x	x	x	x	x
Pathology	96	1	1	2	x		x		x	x	x				x	x	x	x	x	x	x	x	x
Parasitology	96	1	1	2			x		x	x	x				x	x	x	x	x	x	x	x	x
Clinical Pharmacology	96	1	1	2			x		x	x	x		x	x			x	x	x	x	x	x	x
Total	768	8	8	16																			



Kafrelsheikh University
Faculty of Veterinary Medicine
Department of Animal medicine



ARS for Diploma in Farm animals Diseases

1) Graduate attributes

At the end of the program, graduate must be able to::

10. Application of the gained specific knowledge in farm animal (ruminant, small ruminant and equines) internal medicine, infectious diseases, pathology, parasitology, nutritional requirements of farm animals and pharmacology.
11. Understanding the different diseases and health problems affecting the farm animal and suggest modern solutions and vision to it and be aware with the ongoing problems and modern concepts in the area of diagnosis, treatment and control of farm animals diseases.
12. Application of analytical methods in the area of diagnosis, treatment and control of farm animal diseases and disorders.
13. Effective communication and lead work team during the diagnosis, treatment or control farm animal diseases and disorders
14. Taking Decision by treatment or destruction of the farm animal under the available situation and knowledge.
15. Effective Use of the available resources and data for diagnosis and prevention of different diseases problems.
16. Awareness with his role in society development and community preservation.
17. Reflecting the commitment to act with integrity, credibility, and the rules of profession.



18. Realizing the importance of self and life-long learning and progress in new diseases, new diagnostic and new treatment and preventive tools.

A) Knowledge and understanding

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Applying theories and principles in the field of farm animal medicine and farm animal infectious diseases. (Diagnosis, treatment, prevention).	Basics, theories and specific knowledge in educational field and sciences related to professional practice
2)	Applying ethical and legal principles for professional practice in the field of farm animal medicine and infectious diseases.	Ethical and legal principles related to professional practice
3)	Applying the quality basics and principles in the field of farm animal medicine and infectious diseases. (Diagnosis, treatment and prevention).	Basics and principles of quality assurance in professional practice in the field of specialization
4)	Realizing the impact of the ability of diagnosis, treatment and prevention of farm animal diseases on environment and work to preserve and maintain the environment.	Impact of professional practice on environment and work to preserve and maintain the environment

B) Intellectual skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Determination different disorders and disease of farm animal and analyzing them to determine its severity.	Determination and analysis of professional problems in the field of specialization and arranging them according to priorities
2)	Designing solution for different field problems of farm animals.	Solving professional problems in specialization field
3)	Analytical reading of researches and books of	Analytical reading of researches and



	farm animal medicine and infectious diseases and understanding them.	scientific topics in the field of specialization
4)	Risk assessment of different risk factors affecting the farm animal and predisposing to problems.	Risk assessment in professional practice.
5)	Professional decision making of the diseases or disorders by either medical or surgical treatment or anesthesia depending on the available information.	Professional decision making using available information

C) Professional and practical skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Diagnosis, treatment, and design control programs of farm animals diseases.	Applying professional skills in the field of specialization
2)	Writing professional reports about different cases and problems of farm animals disorders and diseases.	Writing professional reports

D) General and transferable skill

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Communicate effectively with farm animals' owners, colleagues and surrounding community.	Effective communication
2)	Utilize the newly emerged information technology to reach the diagnosis, treatment and control of farm animal diseases as rapid as possible and know the newly emerging problems in farm animal's field.	Utilizing information technology to serve development of professional practice.
3)	Self-assessment and determination of personal educational needs in the field of farm animals and	Self-assessment and determination of personal educational needs.



	related science.	
4)	Using different information resources (books, internet, etc.) to obtain knowledge and information about farm animals problems.	Using different resources to obtain knowledge and information.
5)	Working in-group to control the different disorders and diseases of farm animals with effectively management of the time.	Working in team and efficient time management.
6)	Leading team of diagnosis and control of farm animals problems.	Leading a team in familiar professional contexts.
7)	Self and continuous learning of basics information about farm animals diseases and newly emerging problems.	Self and continuous learning

أولا: برامج دبلومه الدراسات العليا

١- مواصفات الخريج

خريج برنامج دبلومه الدراسات العليا في أي تخصص يجب أن يكون قادرا على:

١. تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
٢. تحديد المشكلات المهنية و اقتراح حلول لها
٣. إتقان المهارات المهنية واستخدام الوسائل التكنولوجية المناسبة في ممارسته المهنية
٤. التواصل و قيادة فرق العمل من خلال العمل المهني المنظمي
٥. اتخاذ القرار في ضوء المعلومات المتاحة
٦. توظيف الموارد المتاحة بكفاءة
٧. الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة
٨. التصرف بما يعكس الالتزام بالنزاهة و المصداقية و قواعد المهنة و تقبل المسائلة و المحاسبة
٩. إدراك ضرورة تنمية ذاته و الانخراط في التعلم المستمر

٢- المعايير القياسية العامة

١ المعرفة و الفهم. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على فهم و استيعاب كل من:

أ- النظريات و الأساسيات و المعارف المتخصصة في مجال التعلم وكذا العلوم ذات العلاقة بممارسته المهنية

ب- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص

ج- مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص

د- تأثير لممارسة المهنية على البيئة و العمل على الحفاظ على البيئة و صيانتها



٢ المهارات الذهنية. ٢

بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:

أ -تحديد و تحليل المشاكل في مجال التخصص و ترتيبها وفقا لأولوياتها

ب -حل المشاكل المتخصصة في مجال مهنته

ج -القراءة التحليلية للأبحاث و المواضيع ذات العلاقة بالتخصص

د -تقييم المخاطر في الممارسات المهنية

هـ -اتخاذ القرارات المهنية في ضوء المعلومات المتاحة

٣ المهارات المهنية. ٢

بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:

أ -تطبيق المهارات المهنية في مجال التخصص

ب -كتابة التقارير المهنية

٤ المهارات العامة و المنتقلة. ٢

بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:

أ -التواصل الفعال بأنواعه المختلفة

ب -استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية

ج -التقييم الذاتي و تحديد احتياجاته التعليمية الشخصية

د -استخدام المصادر المختلفة للحصول على المعلومات و المعارف

هـ -العمل في فريق وإدارة الوقت

و -قيادة فريق في سياقات مهنية مألوفة

ز -التعلم الذاتي و المستمر



Course specification (2021 / 2022)

1- Basic Information:

Code number:

Course title::*Internal Medicine Disease (Diploma of Livestock animals)*

Academic Year: Diploma degree

Total teaching hours:192hrs

Lecture: 96hrs

Practical: 96hrs

2- OVERALL AIMS OF THE COURSE:

To supply the Diploma students with the latest knowledge, technology and andacquire the skills of data collection in the field of veterinary Internal medicine and identifying different internal medicine diseases of livestock animals to enhance the ability of the students for reaching the definite diagnosis of for such diseases and consequently successfully treatment and prevension of these affections.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1-List different diseases affecting livestock animals.

A2-Recognize the different etiological causes for internal medicine diseases of livestock animals.

A3- Memorize the pathophysiological events participate in diseases occurrence with clinical events associated with these affections of livestock animals.

A4-Realize the methods used for diseases diagnosisof livestock animals.

A5-Retrieve the ideal lines for treatment and control of different internal medicine diseasesof livestock animals.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1-Transform advanced technology is used for the diagnosis of internal medicine diseases for other veterinarian colleagues.

B2- Intpretthe laboratory reports associated with different internal medicine diseases.of livestock animals.

B3- Differentiate between various diseases with similar clinical signsof livestock animals.

B4- Estimate the value of animal if compared with the cost of the treatment.

B5- Relate the occurrence of different affections of livestock animalsto environmental, epidimological data and climate change.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:



- C1- Implement different prevention and vaccination plan for control of different internal medicine diseases of livestock animals.
 C2- Manipulate different samples for laboratory examination facilitating the diagnosis of internal medicine diseases of livestock animals.
 C3- Apply the advanced molecular and serological techniques for diagnosis of internal medicine diseases of livestock animals.
 C4- Construct modern of livestock clinic with updated technologies and facilities.
 C5- Produce advanced managemental strategies for prevention the internal medicine disease occurrence.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1- Gain skills in problem solving.
 D2- Acquire Communication skills.
 D3- Use new technology and has the ability of self learning.
 D4- Develop the ethical behaviors between students and staff members as well as among the students themselves.
 D5- Work in ateamwork and effective groups.

4 - COURSE CONTENTS:

S. NO.	TOPIC	Total hours	Hours for lecture	Hours for practical
1	Diseases of digestive system of livestock animals	28	14	14
2	Diseases of respiratory system of livestock animals	24	12	12
3	Diseases of urinary system of livestock animals	24	12	12
4	Diseases of musculoskeletal system of livestock animals	20	10	10
5	Diseases of cardiovascular system of livestock animals	28	14	14
6	Nutritional deficiency diseases of livestock animals	28	14	14
7	Production and metabolic diseases of livestock animals	16	8	8
8	Skin diseases of livestock animals	24	12	12
	Total	192	96	96

5- TEACHING & LEARNING METHODS:

*Lectures:

Using data show, brain storming, and white board.



***Practical and small group sessions:**

Practical demonstrations, practice of skills and discussions.

***Site visits:**

Visits to dairy farms for practical application.

***Self learning:**

(Computer researches and faculty library visits to prepare essays and presentations)

- Library researches.
- Internet researches.
- Discussion in the researches.
- Color atlas of veterinary internal medicine diseases.

***Audiovisual:**

Slides and videos for diseased cases

6. METHODS FOR STUDENTS With limited capabilities:-

No disabled students until now, but if present the staff members in the department plan to held several meetings with the students to face any difficulties that meet the students.

7. STUDENT ASSESSMENT:

7.a Used methods	Written examination	Oral examination	Practical examination
7.b Time	During December following the end of the year	During December following the end of the year	At the end of the year
7.c Grads	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Text books in Veterinary Internal Medicine available in library of the faculty.
- Overhead projections, Microscopes, slides and computer presentations used during teaching.

8-2: Recmended books:

- Radostits O.M., Blood D.C. and Gay C.C. (2007): Veterinary Medicine, 9th Ed. Baillere Tindall, London.
- Step D. L., Sheila M McGuirk and Robert J. Callan (1992): Ancillary tests of the cardiovascular and lymphatic system cited in the Vet. Clinics of North America. 8 Vol. 8 No.1, pp. 257.
- Coles E. H. (1986): Veterinary clinical pathology 4th Ed. Bailier Tindal London.
- Rosenberger G (1979): Clinical examination of cattle 2nd Verlagpaulparey Berlin and Hamburg.
- Kelly (1984): Veterinary clinical examination.

8-3: SUGGESTED MATERIALS:

- Barr, F.I. (1990): Textbook of diagnostic ultrasound in the dog and cat: 1st ed. Blackwell Sc. Publications, pp 2, 46, 148.
- Hagen-Ansert, S.L. (1989): Textbook of Diagnostic Ultrasound, 3rd ed. Philadelphia: WB Saunders.



- Kealy, J.K. and McAllister, H. (2005): Textbook of Diagnostic Radiology, ultrasonography of the dog and cat, 4th ed.: 1-19.
- Matwichuk, C. L., Daniel, G.B., De Novo, R.C., Schultze, A.E., Schmidt, D.E. and Creevy, K.E. (2000): Veterinary Radiology and Ultrasound, 41(1): 78-84.

8-4: web sites and journals:

- WWW.PubMed.com
- International of veterinary information services (IVIS)
- www.Vet.net.com

9.1. Course content ILOs Matrix:

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Diseases of digestive system of livestock animals	A1-A5	B1-B5	C1-C5	D1-D5
Diseases of respiratory system of livestock animals	A1-A5	B1-B5	C1-C5	D1-D5
Diseases of urinary system of livestock animals	A1-A5	B1-B5	C1-C5	D1-D5
Diseases of musculoskeletal system of livestock animals	A1-A5	B1-B5	C1-C5	D1-D5
Diseases of cardiovascular system of livestock animals	A1-A5	B1-B5	C1-C5	D1-D5
Nutritional deficiency diseases of livestock animals	A1-A5	B1-B5	C1-C5	D1-D5
Production diseases of livestock animals	A1-A5	B1-B5	C1-C5	D1-D5
Skin diseases of livestock animals	A1-A5	B1-B5	C1-C5	D1-D5

9.2. Assessment ILOs Matrix:

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	general	
Written examination	A1-A5	B4,B5	-	D2,D3	50
Oral examination	A1-A5	B4,-B5	-	D3,D4	25
Practical examination	-	B1,B2,B3	C1-C5	D1, D5	25

Course Coordinator:

Dr. Naglaa abdelmagidGomaa

Head of Department:

Prof. Dr. Ismail Ibrahim



Course specification (2021-2022)

1- Basic Information:

Code number:

Course title: *Infectious Diseases (Diploma of Livestock animals diseases)*

Academic Year: Diploma degree

Total teaching hours: 192hrs

Lecture: 96hrs

Practical: 96hrs

2. AIM OF THE COURSE:

To provide students with knowledge and skills concerning bacterial, viral, parasitic, mycotic and prion caused diseases that affect farm animals .

3. INTENDED LEARNING OUTCOMES (I. L. Os.):

By the end of the course, students should be able to:

3-A: KNOWLEDGE and UNDERSTANDING:

A1- Determine infectious diseases affecting different farm animals, and the methods of transmission of such diseases.

A2- Enumrate the causes, pathogenesis, clinical symptoms the epidemiological features in each infectious disease.

A3- Recognize different methods of diagnosis for different farm animals infectious diseases..

A4-Cite the complete therapeutic plan, accurate prognosis for each different farm animals infectious disease and mention the appropriate and suitable methods of prevention and control of such infection on individual animal and farm levels in different situations according to what is already exist in Egypt.

A5-Define the appropriate management and control measures for these diseases.

A6-Prescribe appropriate measures for health promotion as well as prevention of these infections.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- Differentiate between different infectious diseases of different farm animals.

B2- Select the most suitable and economic line of treatment.

B3- Write and evaluate clinical reports about different farm animals infectious diseases.

B4- Plan a schedule for vaccination against infectious disease.

3-C: Practical and professional skills:

C1- Perform clinical examination and proper sampling from diseased different farm animals.

C2- Master basic laboratory skills for diagnosis of different farm animals bacterial, mycotic, parasitic and viral diseases.



C3-Apply the basic diagnostic tools to reach the correct diagnosis and differential diagnosis.
C4- Construct prevention and control strategy for different farm animals infectious diseases

3-D: GENERAL SKILLS & ATTITUDE:

D1-Coach and work in group.

D2-Classify different duties.

D3-Utilize computer and internet skills..

D4-Develop the ethical behaviors between students and staff members as well as among the students themselves.

4. COURSE CONTENTS:

TOPIC	Total hours	Hours for lectures	Hours for practical
Camel diseases	8	8	-
Bacterial diseases of cattle and buffaloes	14	14	-
Viral diseases of cattle and buffaloes	14	14	-
Parasitic diseases of cattle and buffaloes	8	8	-
Mycotic infections in cattle and buffaloes	2	2	-
Rickettsial diseases of cattle and buffaloes	4	4	-
Diseases of neonates	8	8	-
Viral diseases of Sheep and goat	10	10	-
Bacterial diseases of Sheep and goat	10	10	-
Parasitic diseases of Sheep and goat	2	2	-
Viral diseases of equines	6	6	-
Bacterial diseases of equines	4	4	-
Parasitic diseases of equines	4	4	-
Mycotic disease of equines	2	2	-
Common terms associateds with infectious diseases	10		10



Anthelmintics	8		8
sampling	8		8
Diagnosis of helmenthiasis	2		2
Diagnosis of blood parasites	6		6
Diagnosis of some bacterial diseases (mastitis-brucellosis – tuberculosis)	10		10
DIAGNOSISA OF MANGE AND RINGWORM	4		4
ANTIBIOTICS	8		8
vaccination	10		10
DIAGNOSIS OF CLOSTRIDIAL DISEASES IN SHEEP	8		8
Diagnosis of glanders	4		4
Clinical cases	18		18
Total	192	96	96

4-C. teaching and learning method:

4-C.1. Lectures

Using data show, white board, brain storming

4-C.2. Practical and small group sessions:

Practical training

(a)Clinical demonstrations, practice of skills, and discussions)

(b) Outpatients clinic in faculty hospital.

(c) Educational videos and photographs.

4-C.3 self learning

(computer researches and faculty library visits to prepare essays and presentations)

-library researches

-internet researches

-discussion in the researches

-Seminars

4-C.4 audiovisual

Data show to display photos and videos

5- METHODS FOR DISABLED STUDENTS:

Activation of office hours

Discussions with them and giving advice whatever needed.

6-Student assessment:



6.a Used methods	Written examination	Oral examination	Practical examination
6.b time	At the end of 48 weeks	At the end of 48 weeks	At the end of 48 weeks
6.c grads	50	25	25

7. LEARNING AND REFERENCE MATERIALS:

7-1: BASIC MATERIALS:

- **Text books:** available for students in the faculty library.
- International journals.
- Overhead and slide projector and computer presentations including data show used during teaching.

7-2: Recmended books:

- Text book of veterinary medicine
- Diseases the livestock
- Merck veterinary manual
- Infectious diseases of equine
- Hungerford's *Diseases of Livestock*

7.3: web sites and jouranls

- WWW.PubMed.com
- WWW.Science Direct.com
- WWW.Springer link.com
- WWW.Wiley.com
- Intrnational of veterinary information services (IVIS)
- www.Vet.net.com
- Veterinary microbiology

8. Content-ILOs matrix:

Topic	ILOs			
	KNOWLEDGE and UNDERSTANDING	INTELLECTUAL SKILLS	Practical and professional skills	GENERAL SKILLS & ATTITUDE
Camel diseases	A1-6	B1-4	-	D1-4
Bacterial diseases of cattle and buffaloes	A1-6	B1-4	-	D1-4
Viral diseases of cattle and buffaloes	A1-6	B1-4	-	D1-4
Parasitic diseases of cattle and buffaloes	A1-6	B1-4	-	D1-4
Mycotic infections in cattle and buffaloes	A1-6	B1-4	-	D1-4
Rickettsial diseases of cattle	A1-6	B1-4	-	D1-4



and buffaloes				
Diseases of neonates	A1-6	B1-4	-	D1-4
Viral diseases of Sheep and goat	A1-6	B1-4	-	D1-4
Bacterial diseases of Sheep and goat	A1-6	B1-4	-	D1-4
Parasitic diseases of Sheep and goat	A1-6	B1-4	-	D1-4
Viral diseases of equines	A1-6	B1-4	-	D1-4
Bacterial diseases of equines	A1-6	B1-4	-	D1-4
Parasitic diseases of equines	A1-6	B1-4	-	D1-4
Mycotic disease of equines	A1-6	B1-4	-	D1-4
Common terms associateds with infectious diseases	-	B1-4	C1	D1-4
Anthelmintics sampling	-	B1-4	C4	D1-4
Diagnosis of helmenthiasis	-	B1-4	C1	D1-4
Diagnosis of blood parasites	-	B1-4	C2-3	D1-4
Diagnosis of some bacterial diseases (mastitis-brucellosis – tuberculosis)	-	B1-4	C2-3	D1-4
DIAGNOSISA OF MANGE AND RINGWORM	-	B1-4	C2-3	D1-4
ANTIBIOTICS vaccination	-	B1-4	C4	D1-4
DIAGNOSIS OF CLOSTRIDIAL DISEASES IN SHEEP	-	B1-4	C4	D1-4
Diagnosis of glanders	-	B1-4	C2-3	D1-4
Clinical cases	-	B1-4	C1-4	D1-4



10- Evaluation ILOS MATRIX

TOOLS	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	General	
Written examination	A1-6	B1-4		D3-D4	50
Oral examination	A1-6	B1-4		D1-4	25
Practical examination	-	B1- 4	C1-4	D1-4	25

Head of the department

Pro. Dr: Ismail Ibrahim

Course co-ordinator

Pro.Dr: Magdy H. Algaabary



KAFRELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENTS 1- HYGIENE AND PREVENTIVE MEDICINE 2- NUTRITION AND CLINICAL NUTRITION

Course specification (2021 / 2022)

1 - Basic Information:

Course title: Animal nutrition and nutritional deficiency diseases

Program on which the course is given: Diploma degree in veterinary medical science
(Diploma of Farm Animal Diseases)

Total teaching hours: 96 hrs

Lectures: 48 hrs

Practical: 48 hrs

2 - OVERALL AIMS OF THE COURSE:

To provide students with knowledge on nutrients function, metabolism and deficiency. Also the course enables student to solve nutritional problems of animal.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1 Describe the functions of nutrients
- A2 Identify metabolism and deficiency of nutrients
- A3 Listing the appropriate nutrients requirements of animals

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1 Modify nutrient requirement
- B2 Plan to solve nutrient deficiency
- B3 Plan to reduce metabolic diseases

3- C: PRACTICAL AND PROFESSIONAL SKILLS:



By the end of the course, students should be able to:

- C1 Apply proper nutritional strategy of animals
- C2 Prevent nutritional diseases
- C3 Reduce metabolic diseases

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1 work effectively as a member of a team in the delivery of services to community.
- D2 Support effective communication with the public, colleagues and appropriate authorities.
- D3 Apply communicating skills, have access to the internet and retrieve information
- D4 Write reports in a form that is satisfactory and understandable.
- D5 point out primary research techniques and critical evaluation.

4 - COURSE CONTENTS:

TOPIC	Total hours (Semester)	Hours for lecture	Hours for practical
Nutrients (functions, metabolism and deficiency)	36	24	12
Feedstuffs	12	-	12
Nutritional deficiency diseases	24	12	12
Metabolic diseases	24	12	12
Total	96	48	48

5- TEACHING & LEARNING METHODS:

***Lectures**

(using data show, white board and brain storming)

***Practical and small group sessions:**

1: Practical training.

(Practical demonstrations, practice of skills, and discussions)

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.



- Discussion in the researches.
- Preparation of scientific reports.

* **Audiovisual**

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	After the end of 48 weeks	After the end of 48 weeks	After the end of 48 weeks
7.c grads	25	12.5	12.5

8. LEARNING AND REFERENCE MATERIALS:

8.1. Essential Books (Text books)

- Animal Nutrition (P. McDonald, Seventh edition, 2010).
- Nutrient Requirements of Dairy Cattle: Seventh Revised Edition, 2001
- Vitamins in Animal Nutrition (Lee Russell McDowell, second edition 2000).
- Minerals in animal nutrition (Lee Russell McDowell, second edition 2003)

8.2. Periodicals, Web sites,..... etc

- Animal feed science journal
- Small ruminant research journal
- Dairy science journal
- Nutritional Abstract and Review
- Veterinary Bulletin.
- Archives of Animal Nutrition.
 - Poultry science journal



Course content ILOs Matrex:

Content	ILOs			
	Knowledge and understanding	Intellectual	Professional and practical	General and transferable
Nutrients (functions, metabolism and deficiency)	a1, a2	B1,b2	C1	d1, d2, d3,d4, d5
Feedstuffs			C1,C2,C3	d1, d2, d3,d4, d5
Nutritional deficiency diseases	A2	B2	C2	d1, d2, d3,d4, d5
Metabolic diseases	A3	B3	C3	d1, d2, d3,d4, d5

Assessment-ILOS matrix

Assessment	ILOs				Weighting of assessment
	Knowledge and understanding	Intellectual	Professional and practical	General and transferable	%
Practical exam			c1, c2,c3	d1,	25%
Oral exam	a1, a2,a3	b1,b2,b3		d2, d3,	25%
Written exam	a1, a2,a3	b1,b2,b3		d4, d5	50%

Head of Department:

Prof. Dr. Abdelnasser Abdellatif Bakr

Course coordinator:

Dr. Eldsoky Elsaid Nassef



KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF PATHOLOGY

Course specification (2021 / 2022)

1 - Basic Information:

Code number:

Course title: Pathology

Academic Year: Diploma programs of Farm Animal Diseases

Total teaching hours: 96 hrs

Lectures: 48 hrs

Practical: 48 hrs

2 - OVERALL AIMS OF THE COURSE:

Enable students to:

- Elucidate the pathogenesis of different microbial and parasitic diseases in different farm animals.
- Perform postmortem and histopathological examination of diseases caused by infective agents in different animal species.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1- Identify the pathogenesis of bacterial, viral, fungal and parasitic diseases in different animal species.

A2- Recognize macro- and microscopical findings of diseased animals in relation to their causative agents.

A3- Describe the stage and progression of the disease status.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- Correlate the histopathological lesions induced by microbial and parasitic diseases with the clinical signs.

B2- Differentiate between the microbial or parasite disease on gross and microscopical pathological bases and other pathogens.

B3- Analyze the staging of the diseases in relation to the chronicity of the lesions.

B4- Interpret the results of Post Mortum and histopathological examination.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:



By the end of the course, students should be able to:

C1- Apply of sampling, postmortem techniques and slide preparation.

C2- Examine different gross and microscopic findings of different infectious agents.

C3- Write a conclusive report depending on the morphological and pathological findings..

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Coach and work in groups.

D2-Classify different duties

D3- Utilize computer and internet skills.

D4-Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
<i>General principles of microbial pathogenesis</i>	6	3	3
<i>Bacterial diseases</i>	14	7	7
<i>Viral diseases</i>	18	9	9
<i>Fungal diseases</i>	14	7	7
<i>Mycoplasmal diseases</i>	8	4	4
<i>Protozoa I diseases</i>	18	9	9
<i>Parasitic diseases</i>	18	9	9
Total	96	48	48

5- TEACHING & LEARNING METHODS:

***Lectures:**

using data show, white board and over head projector.

***Practical and small group sessions:**

Practical training: Practical demonstrations, practice of skills, and discussions.

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

Histopathological Drawings.

Library researches.

Internet researches.

Discussion in the researches.

Preparation of scientific reports.



Audiovisual Television circle in the practical laboratory.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	One examination at the end of the academic Year	One examination at the end of the academic Year	One examination at the end of the academic Year
7.c grads	25	10	15

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Practical Department Notes: available for students to purchase from the department.*
- Microscopes, slides, projector slides, Data show.

8-2: Recmended books:

- A Textbook of Veterinary Special Pathology Infectious Diseases of Livestock and Poultry. : A.K. Katiyar, J.L. Vegad. nternational Book Distributing Co (March 1, 2002)*
- Pathology of domestic animals, 4th ed. by Jubb K.V.F., Kennedy P.G. and Palmer N. (1994).*

8-3: SUGGESTED books:

- Robbins & Cotran Pathologic Basis of Disease. Vinay Kumar, Nelso Fausto, Abul Abbas. Saunders; 7 edition, USA, 2004*
- Veterinary pathology Textbook. (By Thomas Carlyle Jones, Ronald Duncan Hunt and Norval W. King, - Wiley-Blackwell, U.S.A., 1997).*

8.4: web sites and jouranlsand so on

- PubMed*
- Science direct*
- Environmental Protection Agency (EPA)*
- Food and Drug Administration (FDA)*
- EPA: Integrated Risk Information System (IRIS)*
- Egyptian Journal of Comparative Pathology and Clinical Pathology*
- Pathologia Veterinaria*
- American Journal of Pathology*
- Journal of Pathology and Bacteriology*
- Archive of Pathology*
- Veterinary Record IVIS*



Intended learning out comes of each topic

TOPIC	K.U (a)	IS (b)	P.P.S (c)	G.T.S (d)
General principles of microbial pathogenesis	A1	B1	C2	D1,D2,D3,D4
Bacterial diseases	A1,A2,A3	B2,B3	C1,C2,C3	D1,D2,D3,D4
Viral diseases	A1,A2,A3	B3,B4	C2,C3	D1,D2,D3,D4
Fungal diseases	A1,A2,A3,	B2,B3,B4	C3	D1,D2,D3,D4
Mycoplasmal diseases	A1,A2,A3	B1,B3	C2	D1,D2,D3,D4
Protozoa I diseases	A1,A2,A3	B3,B4	C1,C3	D1,D2,D3,D4
Parasitic diseases	A1,A2,A3	B1,B2,B3	C1,C3	D1,D2,D3,D4

Evaluation Intended learning out comes

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectua I	Practical	general	
Written examination	A1,A2,A3,	B1,B2,B3		D3	25
Oral examination	A1,A2,A3	B1,B2,B3,B4		D4	10
Practical examination			C1,C2,C3	D1,D2	15

Course Coordinator:

Dr. Eman Abdelaziz

Head of Department:

Prof. Dr. Ahmed Elsawak



KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF PHARMACOLOGY

Course specification

(2021 / 2022)

1 - Basic Information:

Code number: -

Course title: Clinical pharmacology .

Program on which the course is given: Diploma of live stock animals.

Total teaching hours: 96 hrs

Lectures: 48 hrs

Practical: 48 hrs.

2 - OVERALL AIMS OF THE COURSE:

The aim of this course is to provide the diploma students with up- to- date basic information and knowledge about the basic principles of clinical pharmacology and the pharmacological bases of drugs application in treatment of different diseased conditions affecting body systems and treatment of different infective agents in live stock animals . Moreover, the drugs uses, side effects , drug residues interactions and contraindications will be discussed.

By the end of the course, students should be able to:

- 1- Illustrate the clinical features of some diseases of live stock animals efficiently.
- 2- Recognize the specific drug conditions affecting different body systems and different infective agents in live stock animals .
- 3- Carry out the specific techniques for clinical applications of different drugs in diseased conditions in live stock animals.
- 4- Be aware with the symptoms associated with the administration of over dosage of most commonly used drugs in live stock animals .

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1- Recognize the basic principles of pharmacology, including drug absorption, distribution, metabolism and elimination with calculation of key pharmacokinetic parameters and understand the usefulness of these parameters in rational drug therapy.



- A2-** Define the general principles of clinical pharmacology and difference from basic pharmacology and apply the principles of pharmacodynamics in clinical case scenarios.
- A3-** Classify commonly used veterinary drugs in live stock animals using a systems-based approach and different infective agents.
- A4-** Explain the characteristics of systems-based classes of drugs and anti infective agents ,including relevant chemistry, source, action , mechanism and site of action on different organs and tissues. , absorption and elimination, pharmaceutical forms , routes of administration, toxicity, adverse or side effects, contraindications, drug interactions , drugs residues and therapeutic uses.
- A5-** Illustrate the clinical features of some diseases in live stock animals efficiently .
- A6-** Identify the policy of clinical application of these drugs in diseased conditions in live stock animals .
- A7-** Describe the importance of interspecies difference and physiological status on drugs application in live stock animals.
- A8-** Explain fully the pharmacological bases for treatment of different diseased conditions in live stock animals .
- A9-** List the importance of environmental and human health implications of drugs in live stock animals .

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1-** Analyze, summarize and evaluate information about drugs (pharmacological actions , uses and side effects) in professional manner.
- B2-** Investigate the principles of pharmacology and knowledge of specific drugs to make rational drug therapy decisions.
- B3-** Choose and administer different drugs according to specific diseased conditions in professional way.
- B4-** Evaluate and solve problems related to drugs administration such as drugs interactions, side effects , residues, toxicities and application by himself.
- B5-** Inspire appropriate concepts in arriving at a critical assessment by himself.
- B6-** Analyze, evaluate and interpret clinical cases.
- B7-** Select the appropriate medical intervention and different methods for the management of emergencies in pet animals.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1-** Distinguish minor illnesses from those requiring prompt medical intervention.
- C2-** Apply and utilize the knowledge of physiology and pharmacology in the proper selection and use of drug in various disease conditions, and in predicting the side effects of drug classes.
- C3-** Carry out the specific techniques for clinical applications of different drugs in diseased



conditions in live stock animals.

C4- Advise the owner of animal on the safe, rational and effective use of drugs.

C5- Evaluate the different side effects associated with the administration of drugs in clinical situations in professional way.

C6- Solve health care problems with a multidisciplinary and integrative approach.

C7- Differentiate between different drugs used at the same diseased conditions and their possible interactions between different lines of treatments.

3- D: GENERAL and transferable SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Perform group working , good management and problem solving ability.

D2- Conduct good communications.

D3-Use new technology and has the ability of self learning.

D4- Develop the ethical behaviors between students and staff members as well as among the students themselves

4 - COURSE CONTENTS:

SNO.	TOPIC	Total hours	Hours for lecture	Hours for practical
1	Introduction of pharmacology Pharmacokinetics , pharmacodynamics and interactions.	3	3	-
2	The general principles of clinical pharmacology.	3	3	-
3	Drugs affecting Autonomic nervous system.	4	4	-
4	Drugs affecting central nervous system.	4	4	-
5	Autacoids and anti-inflammatory drugs.	2	2	-
6	Drugs affecting digestive, urinary and reproductive systems .	4	4	-
7	Drugs affecting respiratory and cardiovascular systems .	4	4	-
8	Drugs affecting skin and eye.	2	2	-
9	Antimicrobial drugs .	6	6	-
10	Anthelmintics .	6	6	-
11	Antiprotozoal agents .	6	6	-
12	Drugs affecting metabolism and metabolic disorders.	2	2	-
13	The baselines of drug selection.	2	2	-



14	Clinical applications of drugs affecting Autonomic nervous system ,side effects and interactions	4	-	4
15	Clinical applications of drugs affecting central nervous system ,side effects and interactions .	4	-	4
16	Clinical applications of autacoids and anti-inflammatory drugs,side effects and interactions .	4	-	4
17	Clinical applications of drugs affecting digestive, urinary and reproductive systems ,side effects and interactions .	6	-	6
18	Clinical applications of drugs affecting respiratory and cardiovascular systems ,side effects and interactions .	4	-	4
19	Clinical applications of drugs affecting skin and eye,side effects and interactions .	2	-	2
20	Clinical applications of antimicrobial drugs ,side effects and interactions .	8	-	8
21	Clinical applications of anthelmintics ,side effects and interactions .	6	-	6
22	Clinical applications of antiprotozoal agents ,side effects and interactions .	6	-	6
23	Clinical applications drugs affecting metabolisms ,side effects and interactions .	4	-	4
	Total	96	48	48

5- TEACHING & LEARNING METHODS:

***Lectures:**

Using data show.

***Practical and small group sessions:**

Practical demonstrations, practice of skills and discussions

*** Self learning:**

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- **Audiovisual:**



Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

No disabled students until now, but if present the staff members in the department plan to held several meetings with the students to face any difficulties that meet the students.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	At the end of academic year	At the end of academic year	At the end of the academic year
<u>7.c grads</u>	25	10	15

8. LEARNING AND REFERENCE MATERIALS:

8-1: Basic materials:

- Text books in Pharmacology available in library of the faculty.
- Overhead projections, Microscopes, , slides and computer presentations used during teaching.

8-2: Recmended books:

- **Bertram G. Katzung (2006):** Basic & Clinical Pharmacology, 10th Edition
- **Joel G. Hardman, Lee E. Limbird and Alfred G. Gilman (2001):** Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 10th Edition.
- **G. C. Brander, D. M. Pugh, R. J. Bywater and W. L. Jenkins (1991):** Veterinary applied pharmacology and therapeutics , 5th Edition.
- **Merck , S. and Dohme , C. (2005) :** The Merck Veterinary Manual, 9th Edition.

8-3: Suggested books:

- **Heinz Lüllmann, M. D.,Klaus Mohr, M. D.,Albrecht Ziegler, Ph.D.,Detlef and Bieger, M. D. (2005) :** Color Atlas of Pharmacology , 3rd edition .
- **Carl Binz (2008):** Lectures on pharmacology for practitioners and students ,Volume: v.2.
- **P. Venkatesan and M. J. Wood (1998):** General principles of antimicrobial therapy , pp. 63-78.

8.4: Web sites and jouranlsand so on:



- Journal of pharmacology and experimental therapeutics.
- British Journal of pharmacology.
- European Journal of Pharmacology.
- Pharmacology, Biochemistry and Behavior.
- <http://www.vetmed.wsu.edu/depts.-vcpl/>
- <http://www.cc.nih.gov/>
- <http://www.acvcp.org/>
- <http://www.clinicalpharmacology.com/>
- <http://www.vetnet.net/>
- <http://www.summitpk.com/pksolutions.htm>
- <http://www.analyticon.co.uk/pkpdpage.htm>
- <http://www.ncbi.nlm.nih.gov>

9.1. Course content ILOs Matrix:

TOPIC	K.U (A)	LS (B)	P.P.S (C)	G.T.S (D)
Introduction of pharmacology Pharmacokinetics , pharmacodynamics and interactions.	A1	B1 to B7	-	D1 to D4
The general principles of clinical pharmacology.	A2	B1 to B7	-	D1 to D4
Drugs affecting Autonomic nervous system.	A3, to A9	B1 to B7	-	D1 to D4
Drugs affecting central nervous system.	A3, to A9	B1 to B7	-	
Autacoids and anti- inflammatory drugs.	A3, to A9	B1 to B7	-	D1 to D4
Drugs affecting digestive, urinary and reproductive systems .	A3, to A9	B1 to B7	-	D1 to D4
Drugs affecting respiratory and cardiovascular systems .	A3, to A9	B1 to B7	-	D1 to D4



Drugs affecting skin and eye.	A3, to A9	B1 to B7	-	D1 to D4
Antimicrobial drugs .	A3, to A9	B1 to B7	-	D1 to D4
Anthelmintics .	A3, to A9	B1 to B7	-	D1 to D4
Antiprotozoal agents .	A3, to A9	B1 to B7	-	D1 to D4
Drugs affecting metabolism and metabolic disorders.	A3, to A9	B1 to B7	-	D1 to D4
The baselines of drug selection.	A6- A9	B1 to B7	-	D1 to D4
Clinical applications of drugs affecting Autonomic nervous system ,side effects and interactions	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of drugs affecting central nervous system ,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of autacoids and anti-inflammatory drugs,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of drugs affecting digestive, urinary and reproductive systems ,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of drugs affecting respiratory and cardiovascular systems ,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of drugs affecting skin and eye,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of antimicrobial drugs ,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of anthelmintics ,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of antiprotozoal agents ,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications drugs	-	B1 to B7	C1 to C7	D1 to D4



affecting metabolisms ,side effects and interactions .

9.2. Assessment ILOs Matrix:

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectual	Practical	general	
Written examination	A1, A2, A3., A4, A5, A6,A7, A8,A9	B1, B2, B3, B4, B5, B6, B7	-	D3,D4	25
Oral examination	A1, A2, A3., A4, A5, A6, A7, A8,A9	B1, B2, B3, B4, B5, B6, B7	-	D3,D4	10
Practical examination	-	B1, B2, B3, B4, B5, B6, B7	C1, C2, C3 C4,C5, C6,C7	D1,D2,	15

Course Coordinator:

Prof. Dr. Kamal Ahmed El- Shazly

Head of Department:

Prof. Dr. Aboelnasr Zahra

KAFRELSHEIKHUNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF PARASITOLOGY

**Course specification
(2021 / 2022)**

1- Basic Information:

Code number:

Course title::*PARASITOLOGY (Diploma of Livestock animals)*

Academic Year: Diploma degree

Total teaching hours:96hrs

Lectures: 48 h

Practical: 48h

2- OVERALL AIMS OF THE COURSE:

- **To provide students with brief basic and fundamental knowledge, skills and positive attitude concerning parasitology and parasites of different farm animals.**
-
-

3- INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING (K.U):

By the end of the course students should be able to

A1-define briefly the fundamental concepts of Parasitology and with the technical vocabulary used in this field.

A2- discussbriefly how could arthropods are able to induce diseases in domesticated, certain wild animal, fish, birds and man.

A3-Identify briefly common taxa of arthropods based on morphological, biologic and geographical criteria and clinical observation.

A4-explainthe behavior and ecology of different arthropod species and stages in the environment.

3-B- Intellectual skills (I.S)

By the end of the course student should be able to

B1-briefly organize the factors responsible for differentiating between infection and disease caused by various parasites.

B2-briefly analyze the parasite-drug interaction and parasite-host interaction (Immune inter-relations between Parasite and the host).

B3- compare between the diagnostic stages of different parasitesbriefly.

3-C- Professional and practical skills (P.P.S)

By the end of the course student should be able to



C1-Diagnose the different parasitic infection in different hosts by direct and indirect methods.

C2- Select proper treatment and control programs for arthropods population based on his/her knowledge of arthropods biology.

3-D- General and transferable skills (G.T.S)

By the end of the course student should be able to

D1-Protect their-selves from infection with different zoonotic arthropods.

D2-Protect their society and environment from pollution with arthropods.

D3- Work in groups

D4- use the internet and media facilities

4. COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Practical
Introduction of parasitology	6	6	0
Trematodes	14	6	8
Cestodes	16	8	8
Nematodes	14	6	8
Arthropods	16	8	8
Protozoa	14	6	8
Diagnosis and Control of animals parasites	16	8	8
Total	96	48	48

5:- TEACHING & LEARNING METHODS:

5.1:- Lectures

(computer based presentations and white board, brain storming)

5.2:- Practical sessions:

1: Practical training

(Practical demonstrations, practical skills for diagnosis, and discussions)



5.3:- self learning

(Computer searches and faculty library visits to prepare essays)

- Library searches.
- Internet searches.
- Discussion of the prepared essays.
- Parasitological figures and drawings.

5.4:- Audiovisual

Television circuit in the laboratories

6. METHODS FOR DISABLED STUDENTS:-

- Special handling in the laboratory with extra time if needed.
- Ensure that all students with disabilities have equal access to educational opportunities and to help students to achieve academic and personal success.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	At the end of 48 weeks	At the end of 48 weeks	At the end of 48 weeks
<u>7.c grads</u>	25	10	15

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Available books and textbooks for students to purchase from bookstores.
- Overhead slide projectors, Dias, Microscopes, TV closed circuit, permanent slides and power presentations.

8-2: Recommended books:

- 1. Roberts, L. S. and J.J. Janovy. 2000. Foundations of Parasitology.5th Edition, W.C.B. Company, U.K.
- 2. Urquhart G. M., J. Armour, J. L. Duncan, A.M. Dunn, F. W. Jennings. 2000. Veterinary Parasitology, Longman Scientific Technical, U.K.
- 3. Soulsby, E. J. L. 1986. Helminths, Arthropods and Protozoa of Domesticated Animals. The English Language Book Society BailliereTindall, London.
- 4. Georgi, J. R., M. E. Georgi and V. J. Theodorides. 1999. Parasitology for Veterinarians. 7th Ed. W.B. Saunder Company London.



- 5. Wall, R. and D. Shearer. 1997. Veterinary Entomology. Chapman and Hall.
- 6. Hendrix, C. M. 1998. Diagnostic Veterinary Parasitology. 2nd Edition. Msoby.

8-3: SUGGESTED MATERIALS:

Video tapes and CDs

8.4: web sites and journals

WWW.PubMed.com

○ **Parasitic Diseases**

<http://www.mic.ki.se/Diseases/c3.html>

○ **Ectoparasites and Endoparasites**

<http://www.soton.ac.uk/~ceb/EctoEndodirectory/frontectoendo.htm>

○ **WHO TDR Home Page** <http://www.who.int/tdr/>

○ **DPDx -CDCs Division of Parasitic Diseases**

<http://www.dpd.cdc.gov/dpdx/Default.htm>

○ **Parasites and Parasitological Resources** <http://www.biosci.ohio-state.edu/~parasite/home.html>

○ **CDC** <http://www.cdc.gov/>

○ **Atlas of Medical Parasitology** <http://www.cdfound.to.it/HTML/atlas.htm>

○ **David Gibson's Parasitological URLs**

<http://www.diplectanum.dsl.pipex.com/purls/>

○ International veterinary information services (IVIS)

○ www.Vet.net.com

○ Journal of Parasitology Research

○ Advances in Parasitology

○ Journal of veterinary Parasitology.

COURSE Ilos matrix

TOPIC	K.U (A)	I.S (B)	P.P.S (C)	G.T.S (D)
Introduction of parasitology				D1-D2- D3-D4
Trematodes	A1-A2-A3- A4	B1-B2- B3	C1-C2	D1-D2- D3-D4
Cestodes	A1-A2-A3- A4	B1-B2- B3	C1-C2	D1-D2- D3-D4



Nematodes	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Arthropods	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Protozoa	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Diagnosis and Control of animals parasites	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4

Evaluation Ilos matrix:

TOOLS	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	practical	general	
Written examination	A1.A2.A3,A4	B1.B2.B3		D3.D4	25
Oral examination	A1.A2.A3,A4	B1.B2.B3		D3.D4	10
Practical examination		B3	C1.C2.	D1.D2.	15

Course coordinators:

Name:Prof. Dr. Mahmoud A. Elseify

Head of the department

Name:Prof. Dr. Reda Khalafalla



Kafrelsheikh University
Faculty of Veterinary Medicine



Kafrelsheikh University

Faculty of Veterinary Medicine

Department of Hygiene and Preventive Medicine

Program Specification for Master Degree

(2021 - 2022)

Program Title:

Master of The Veterinary Science

(Animal Husbandry)



A- Administrative information:

- 1- **Awarding Body:** Kafrelsheikh University
- 2- **Teaching Body:** Faculty of Veterinary Medicine
- 3- **Department responsible:** Hygiene and Preventive Medicine
- 4- **Program Title:** **Animal Husbandry**
- 5- **Final award:** Diploma Degree
- 6- **Registration period:** one year
- 7- **Program Co- coordinator:** Prof. Dr.:**Tarek balabel**
- 8- **External evaluator:**

B- Professional information:

1- Aim of the Program:

- Create new knowledge and understanding through the process of research & inquiry.
- Enable graduates to achieve competency in modern laboratory technology.
- Allow graduates to develop practical research project.
- A Good grade in diploma can serve as a basis for admission to master study in veterinary science in the field of animal husbandry.

2- Academic standards:

Academic reference standards (ARS) adopted by the faculty committee No 1(14/9/2014)

3-Graduate attributes:

At the end of the program, graduate must be able to:

- 1) Application of the gained specific knowledge in animal management, husbandry, nutrition, hygiene and reproduction.
- 2) Identification of managerial, hygienic, nutritional and reproductive problems and suggest suitable solutions.
- 3) Master skills of measuring animal behavior, production and reproductive efficiency of farm animals.
- 4) Apply skills of hygienic control of animal farms.
- 5) Communicate effectively and lead work team in the field of animal husbandry.



- 6) Make decision under different professional situations.
- 7) Use of the available resources efficiently in management of animal farms.
- 8) Be aware with his role in husbandry and animal wealth.
- 9) Reflect the commitment to act with integrity, credibility, and the rules of farm management.
- 10) Realize the importance of self and life-long learning and progress

4-Programme outcomes [intended learning outcomes (ILOs)]

a. Knowledge and understanding:

On successful completion of this programme, graduate will be able to:

- a.1. Define basic principles and theories of animal husbandry, management, nutrition, reproduction and behavior of farm animals.
- a.2. Recognize the legal and ethical principles of dealing with farm animals to enhance welfare.
- a.3. Outline basics and principles of quality assurance in applied practice in the farm animal.
- a.4. Recognize the influence of managerial practices on surrounding environment and methods to maintain clean environment.

b. Intellectual skills:

At the end of the program, graduate must be able to:

- b.1. Analyze different animal management problems to reach animal welfare.
- b.2. Solving managerial, hygienic, nutritional and reproductive problems of farm animal using the available facilities and information.
- b.3. Relate between different results in the recently published scientific papers in management field.
- b.4. Assess risk in the practices of animal husbandry.
- b.5. Reading analytically researches and scientific topics in the field of animal management.
- b.6. Select the right decision related to farm management using available information.

c. Practical and professional skills:

At the end of the programme, graduate must be able to:

- c.1. Master the basic practical skills in animal husbandry, nutrition, reproduction and hygiene.
- c.2. Follow up behavioral cases.
- c.3. Write case report and Follow-up chart.



d. General and transferable skills:

At the end of the programme, graduate must be able to:

- d.1. Communicate efficiently with teaching staff, colleagues and the community
- d.2. Utilize information technology in scientific research and publications.
- d.3. Update information and knowledge and exchange it with staff and colleagues.
- d.4. Identify and use different sources of information and knowledge in animal management and other related topics.
- d.5. Respect the importance of team work and do good control of time.
- d.6. Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team.
- d.7. Use the tools important for self and continuous learning.

5. Program structure

a. Program duration (years):

- Diploma of full calendar year from December to November.

b. Program courses:

course	Total hours	lecture hours per week	Practical hours per week
Animal Behavior and Management	192	2	2
Animal Hygiene	96	1	1
Animal Breeding and improvement	96	1	1
Animal Nutrition and Malnutrition	144	1	2
Farm animal production	144	1	2
Physiology of reproduction	96	2	-
Total	768	8	8

6-Teaching and Learning Methods:

The program features a variety of teaching approaches for different intended learning objectives, including lectures, practical and lab sessions and seminars.

7- Student assessment:



The program courses depends on different assessment ways:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills

Assessment of program intended learning outcomes

Tool or method	ILOs			
	K & U (a)	IS (b)	P.P (c)	G.T (d)
Written	1-4	1,2,4,6		
Oral	1-4	1,3,4		1-7
Practical		1,2,3	1-3	1-7

8-Marking scale as follow:-

Grade		Percentage
Excellent		> 90
Very good		>80
Good		>70
Pass		>60
Fail	weak	45 to less than 60
	very weak	Less than 45

9-Evaluation of program outcomes

Code	Evaluator	Tools	Sample
1	Postgraduate students	Questioners	20%
2	Stakeholder	Questioners & Open discussion	10
3	Alumni	Questioners	15



4	External examiners	Report	1
5	External evaluators	Report	1

10. Program Admission Requirements:

Applicant must normally satisfy the Faculty of Veterinary Medicine University of Kafrelsheikh general entrance and requirement.

- The applicant must have regular attendance in his courses according to the schedule of the faculty.

11. Regulations for progression of program

- a) Registration period for the Diploma in veterinary medicine sciences is one year after the approval date by the Faculty council, and it should not exceed a period of two years.
- b) The student should conduct the courses proposed by both department council and approved by postgraduate and research committee and faculty council (article 32) in regulation law list and the student will be entitled to apply for the exam. only after meeting attendance rate for each course.
- c) The student should pass written, practical and oral exams successfully in all courses, and the grade will be estimated according to in regulation law list.
- d) The Faculty council has the right to deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- e) Registration will be during September of each year.
- f) Failure in or depriving from entering one or more course did not require reexamination of successful passed courses.

12-Examination Regulations

- a- Time of written exam, 3 hours for each course that has 3 hours or more for lecture / practical /week. **If has less than 3 hours/week, the time of exam, is 2 hours only.**



The final degree of each course which has 3 hours (lecture and practical) per week is **100 and less than 3 hours is 50 degrees and divided into 50% for written exam, and 50% for practical and oral exam**

The program depends on different assessment ways. Course assessment is made of three elements, written, practical and oral exams. These summative assessment measures to extent student are able to demonstrate

Matching program ILOs with ARS - Matrix

Prog ILOs	ARS																			
	K&U (a)				I.S. (b)						P.P. (c)			G.T. (d)						
	1	2	3	4	1	2	3	4	5	6	1	2	3	1	2	3	4	5	6	7
K&U	1	2	3	4																
I.S.					1	2	3	4	5	6										
P.P.											1	2	3							
G.T.														1	2	3	4	5	6	7

Program Coordinator
Prof.dr. Tarek balabel

Head of department
Prof.dr. Tarek balabel



Program Specification Matrix

Courses Name	Total Contact hours/ course	No. of Weeks	No. of hours / week			K.U (a)				I.S (b)						P.P (c)			G.T (d)									
			Lect.	Lab.	Total	1	2	3	4	1	2	3	4	5	6	1	2	3	1	2	3	4	5	6	7			
Animal Behaviour and Management	192	48 weeks	2	2	4	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X		X	X			
Animal Hygiene	96		1	1	2	X	X	X	X	X	X		X		X	X		X	X	X	X	X		X	X	X	X	
Animal Breeding and improvement	96		1	1	2	X		X	X		X	X		X	X	X		X	X	X		X		X		X	X	
Animal Nutrition and nutritional deficiency	144		1	2	3	X	X		X	X		X	X	X		X	X		X	X	X		X	X		X	X	X
Farm animal production	144		1	2	3	X	X	X		X	X		X		X	X	X	X	X	X	X	X		X	X	X	X	
Physiology of reproduction	96		2	-	2			X	X		X	X	X		X		X		X	X	X	X	X	X	X	X	X	X
Total	768			8	8	16																						

ARS for Diploma in Animal husbandry

1) Graduate attributes

At the end of the program, graduate must be able to::

- 11) Application of the gained specific knowledge in animal management, husbandry, nutrition, and hygiene
- 12) Identification of managerial, hygienic, nutritional and reproductive problems and suggest suitable solutions.
- 13) Master skills of measuring animal behavior, production and reproductive efficiency of farm animals.
- 14) Apply skills of hygienic control of animal farms.
- 15) Communicate effectively and lead work team in the field of animal husbandry.
- 16) Make decision under different professional situations.
- 17) Use of the available resources efficiently in management of animal farms.
- 18) Be aware with his role in husbandry and animal wealth.
- 19) Reflect the commitment to act with integrity, credibility, and the rules of farm management.
- 20) Realize the importance of self and life-long learning and progress

A) Knowledge and understanding

Adopted ARS		NARS (Diploma)	
	<i>By the end of this program the graduate should understand and accommodate the following:</i>		<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Recognizing theories and principles of behaviour, management, hygiene, breeding, nutrition, production and reproduction in farm animals.		Basics, theories and specific knowledge in educational field and sciences related to professional practice
2)	Recognizing ethical and legal principles for professional practice in the field of animal welfare.		Ethical and legal principles related to professional practice
3)	Recognizing the bases of quality in animal management		Basics and principles of quality assurance in professional practice in the field of specialization
4)	Realize the impact of animal management on environment and work to preserve and maintain the environment.		Impact of professional practice on environment and work to preserve and maintain the environment

B) Intellectual skills

Adopted ARS		NARS (Diploma)	
	<i>By the end of this program the graduate should</i>		<i>By the end of this program the graduate should understand and</i>

	<i>understand and accommodate the following:</i>	<i>accommodate the following:</i>
1)	Determining and analyzing the animal management problems and arrange them according to priorities.	Determination and analysis of professional problems in the field of specialization and arranging them according to priorities
2)	Solving managerial, hygienic, nutritional and reproductive problems of farm animal using the available facilities and information.	Solving professional problems in specialization field
3)	Reading analytically researches and scientific topics in the field of animal management.	Analytical reading of researches and scientific topics in the field of specialization
4)	Assessing risks in the practices of animal husbandry.	Risk assessment in professional practice.
5)	Making professional decisions related to farm management using available information.	Professional decision making using available information

C) Professional and practical skills

	Adopted ARS	NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Applying basic and professional skills in the field of Animal Husbandry.	Applying professional skills in the field of specialization
2)	Fulfilling practical and Laboratory techniques for in the professional field.	
3)	Writing, concluding and evaluating a professional and conclusive report.	Writing professional reports

D) General and transferable skill

	Adopted ARS	NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Effective communication with teaching staff, colleagues and the community	Effective communication
2)	Utilizing information technology in scientific research and publications.	Utilizing information technology to serve development of professional practice.
3)	Updating information and knowledge and exchange	Self-assessment and determination of

	it with staff and colleagues.	personal educational needs.
4)	Identifying and using different sources of information and knowledge in poultry and rabbits diseases and other related topics	Using different resources to obtain knowledge and information.
5)	Respecting the importance of team work and do good control of time.	Working in team and efficient time management.
6)	Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team	Leading a team in familiar professional contexts.
7)	Using the tools important for self and continuous learning	Self and continuous learning

أولاً: برامج دبلومه الدراسات العليا

١- مواصفات الخريج

خريج برنامج دبلومه الدراسات العليا في أي تخصص يجب أن يكون قادراً على:

١. تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
٢. تحديد المشكلات المهنية و اقتراح حلولاً لها
٣. إتقان المهارات المهنية واستخدام الوسائل التكنولوجية المناسبة في ممارسته المهنية
٤. التواصل و قيادة فرق العمل من خلال العمل المهني المنظومي
٥. اتخاذ القرار في ضوء المعلومات المتاحة
٦. توظيف الموارد المتاحة بكفاءة
٧. الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة
٨. التصرف بما يعكس الالتزام بالنزاهة و المصداقية و قواعد المهنة و تقبل المسائلة و المحاسبة
٩. إدراك ضرورة تنمية ذاته و الانخراط في التعلم المستمر
- ٢- المعايير القياسية العامة
- ١ المعرفة و الفهم. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على فهم و استيعاب كل من:

- أ- النظريات والأساسيات والمعارف المتخصصة في مجال التعلم وكذا العلوم ذات العلاقة بممارسته المهنية
- ب- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص
- ج- مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص
- د- تأثير لممارسة المهنية على البيئة و العمل علي الحفاظ علي البيئة وصيانتها

٢ المهارات الذهنية. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على:

- أ- تحديد و تحليل المشاكل في مجال التخصص و ترتيبها وفقاً لأولوياتها
- ب- حل المشاكل المتخصصة في مجال مهنته
- ج- القراءة التحليلية للأبحاث و المواضيع ذات العلاقة بالتخصص
- د- تقييم المخاطر في الممارسات المهنية
- هـ- اتخاذ القرارات المهنية في ضوء المعلومات المتاحة

٣ المهارات المهنية. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على:

أ- تطبيق المهارات المهنية في مجال التخصص

ب- كتابة التقارير المهنية

٤ المهارات العامة و المنتقلة. ٢

بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:

أ- التواصل الفعال بأنواعه المختلفة

ب- استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية

ج- التقييم الذاتي و تحديد احتياجاته التعليميه الشخصية

د- استخدام المصادر المختلفة للحصول على المعلومات و المعارف

هـ- العمل في فريق وإدارة الوقت

و- قيادة فريق في سياقات مهنية مألوفة

ز- التعلم الذاتي و المستمر

Course specification (2021 / 2022)

1 - Basic Information:

Course title: **Animal and Poultry Behavior and Management**

Program on which the course is given: *Diploma of animal husbandry*

Total teaching hours: 192 hrs

Lectures: 96

Practical: 96

2 - OVERALL AIMS OF THE COURSE:

To provide student with basic knowledge and skills concerning:

- To support achievement of basic knowledge of normal and abnormal animal behavior and management to improve their productivity.
- To enable students to provide the suitable environmental conditions for farm and pet animals.
- To provide students with an appropriate background covering the common and important management for each species of animals.
- To enable the students with an appropriate skills for solving the farm problems as a method for decreasing the stress and increasing the animal productivity.
- To provide the students with some knowledge which help them to avoid the animal's danger.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1 List normal and abnormal behaviors in different animal species.

A2 Determine the most suitable method of management for each animal species at different ages.

A3 Recognise the causes and Describe appropriate managerial control for the most important animal vices.

A4 Define the role of management to avoid some farm animal diseases.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1 Interpret the most important symptoms and signs of healthy and sound animals.

B2 Decide the managerial plans for each animal species.

B3 Solve the common clinical problems associated with animal management.

B4 Design the control method for any vicious diseased animal admit in the clinic.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1 Collect vital signs for soundness in young and adult animals.

C2 Perform the right methods used for securing and casting of animals during difficult examination.

C3 Employ a proper management for any diseased animal.

C4 Apply an adequate clinical examination for diseased animal with care.

C5 Correct some animal vices.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1 Collect any data about animal's behavior in an organized and informative manner.

- D2 Communicate effectively with farm's owners using appropriate communication skills.
 D3 Present the important managerial practices that increase animal's welfare and its productivity.
 D4 Work in a teamwork and under pressure.

4 - COURSE CONTENTS:

4.Content topics:-

TOPIC	Hours for lecture	Hours for practical
General Ethology	16	-
Cattle's behavior and management	20	-
Equine's behavior and management	20	-
Sheep and Goat's behavior and management	20	-
Camel's behavior and management	20	-
Point of farm animals	-	12
Restraint of animals	-	24
Clipping of animals	-	12
Fastening of animals	-	12
Grooming of animals	-	12
Washing of animals	-	12
Bedding and clothing of farm animals	-	12
Total	96	96

5- TEACHING & LEARNING METHODS:

*Lectures

(using data show, white board, overhead projector and brain storming)

*Practical and small group sessions:

1: Practical training.

(Practical demonstrations, practice of skills, and discussions)

* Farm visits

visit to the animal production farm

* Self learning

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.

- Discussion in the researches.
- Preparation of posters
- Preparation of scientific reports.

*** Audiovisual**

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
- *Activation of office hours.
- *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written exam	Oral exam	Practical exam
<u>7.b time</u>	At the end of course 48wk	At the end of course 48wk	Before the end of course 48wk
<u>7.c Marks</u>	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: Recmended books:

8.1. a- Farm Animal Behavior. Frazer. D (2012)

8.1.b- Poultry Behavior and Welfare. Appleby et al. (2010)

8.2: web sites and jouranlsand so on

- WWW.PubMed.com
- Intrnational of veterinary information services (IVIS)
- www.Vet.net.com
- Journal of Hormone and Behavior
- Journal of applied Animal Ethology

Intended learning out comes of each topic

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
General Ethology	A1-A4	B1-B2-B4	-	D1-D2-D3D4
Cattle's behavior and management	A1-A2-A3- A4	B1-B2-B4	-	D1-D2-D3-D4
Equine's behavior and management	A1-A2-A3- A4	B1- B3-B4	-	D1-D2-D3-D4
Sheep and Goat's behavior and management	A1-A2-A3- A4	B1- B3-B4	-	D1-D2-D3-D4

Camel's behavior and management	A1-A2-A3- A4	B1-B2-B3-B4	-	D1-D2-D3-D4
Point of farm animals	-	B1-B2-B3-B4	C1-C2-C3-C4-C5	D1-D2-D3-D4
Restraint of animals	-	B1-B2-B3-B4	C1-C2-C3-C4-C5	D1-D2-D3-D4
Clipping of animals	-	B1-B2-B3-B4	C1-C2-C3-C4-C5	D1-D2-D3-D4
Fastening of animals	-	B1-B2-B3-B4	C1-C2-C3-C4-C5	D1-D2-D3-D4
Grooming of animals	-	B1-B2-B3-B4	C1-C2-C3-C4-C5	D1-D2-D3-D4
Washing of animals	-	B1-B2-B3-B4	C1-C2-C3-C4-C5	D1-D2-D3-D4
Bedding and clothing of farm animals	-	B1-B2-B3-B4	C1-C2-C3-C4-C5	D1-D2-D3-D4

Evaluation Intended learning out comes matrix

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectual	Practical	general	
Written examination	A1.A2.A3.A4	B1-B2-B3-B4	-	-	50
Oral examination	A1.A2.A3.A4	B1.B2.B3.B4	-	D2-D3	25
Practical examination	-		C1.C2.C3. C4.C5	D1, D4	25

Course Coordinator:
Prof. Dr. Tarek Balabel

Head of Department:
Prof. Dr. Tarek Balabel

Course specification

(2021 / 2022)

1 - Basic Information:

Code number:--

Course title: **Animal Breeding and Improvement**

Academic Year: **Diploma of Animal Husbandry**

Total teaching hours: 96 h

Lectures: 48 h

Practical:48 h

2 - OVERALL AIMS OF THE COURSE:

At the end of this course, the student must be comprehend the principles of animal heredity and breeding in the goal of raising animals of high production potential, gain preliminary competences in animal production and familiarized with the concepts involved in the application of genetic principles to animal improvement.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- a.5. Recognize the principles of animal production regarding the fields of heredity, breeding, nutrition and management in the goal of raising animals of high production potential.
- a.6. Identify the principles of animal breeding and genetics and how to apply them to increase the efficiency of farm animal production.
- a.7. Enumerate types and breeds of farm animals and their type of production.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- Analyze animal breeding and production problems using group discussions, and problem solving.
- b.2. Select the independent research results and discussions necessary to complete assignments, and creativity through determining how to present material in an effective manner.
 - b.3. Investigate the subject of how to deal with and manage animal production enterprises

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

- c.1. Develop husbandry programs.
- c.2. Record and analyze production records.
- c.3. Apply genetic principles in improvement of farm animal production.
- c.4. Judge farm animal production.

3- D: GENERAL SKILLS:

By the end of this course, the student should be able to:

- d.8.** Join and work effectively as part of a team.
- d.9.** Efficiently make use of library facilities and IT tools.
- d.10.** Design the spreadsheets, presentation packages and graph plotting.

4 - COURSE CONTENTS:

Topics		No. of hours		
		Lectures	Practical	Total
1	Traits, Phenotypes, Genotypes and Genes in Populations	2	2	4
2	The Basic Model for Quantitative Traits	4	4	8
3	Gene and genotype frequencies	4	4	8
4	Mating Systems	4	4	8
5	Genetic Parameters	4	4	8
6	Correlations	4	4	8
7	Principles of Selection	2	2	4
8	Selection methods	4	4	8
9	Factors altering gene and genotypic frequencies (solved problems)	4	4	8
10	Relationship and Inbreeding coefficients (solved problems) Hybrid vigor (solved problems)	4	4	8
11	Genetic parameters (solved problems)	6	6	12
12	Response and Correlated Response to selection (solved problems)	6	6	12
Total		48	48	96

5- TEACHING & LEARNING METHODS:

- 4.1 Lectures.
- 4.2 Practical sessions.
- 4.3 Self-learning activities.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written exam	Oral exam	Practical exam
<u>7.b time</u>	At the end of course 48wk	At the end of course 48w	Before the end of course 48w
<u>7.c Marks</u>	25	10	15

8. LEARNING AND REFERENCE MATERIALS:

6.1. Essential textbooks

- Bourdon, A. (2014): Understanding Animal Breeding. 1st Ed. Printce Hall, New Jersey
- Falconer, D. and Mackay, T. (2010): Introduction to Quantitative Genetics. 4th Edition. Longman.
- Simm, G. (2011) Genetic Improvement of cattle and sheep. Farming Press, Miller Freeman, UK, Ltd.

6.2. Periodicals

- Journal of Dairy Science
- Tropical Animal Health and Production
- Journal of Animal Science
- Journal of Heredity
- Small Ruminant Research

6.4. Web sites

- http://www.fao.org/ag/againfo/themes/en/animal_production.html
- http://www.fao.org/ag/againfo/resources/en/pubs_aprod.html

Intended learning out comes of each topic

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Traits, Phenotypes, Genotypes and Genes in Populations	A1-A3	B1-B2	C1-C2-C3-C4	D1-D2-D3
The Basic Model for Quantitative Traits	A1-A2-A3	B1-B2	C1-C2-C3-C4	D1-D2-D3
Gene and genotype frequencies	A1-A2-A3	B1- B3	C1-C2-C3-C4	D1-D2-D3
Mating Systems	A1-A2-A3	B1- B3	C1-C2-C3-C4	D1-D2-D3
Genetic Parameters	A1-A2-A3	B1-B2	C1-C2-C3-C4	D1-D2-D3
Correlations	A1-A3	B1-B2-B3	C1-C2-C3-C4	D1-D2-D3
Principles of Selection	A1-A3	B1-B2-	C1-C2-C3-C4	D1-D2-D3
Selection methods	A1-A3	B1-B2-	C1-C2-C3-C4	D1-D2-D3
Factors altering gene and genotypic frequencies (solved problems)	A1-A3	B1-B2-B3	C1-C2-C3-C4	D1-D2-D3
Relationship and Inbreeding coefficients (solved problems)	A1-A3	B1-B2-B3	C1-C2-C3-C4	D1-D2-D3
Hybrid vigor (solved problems)	A1-A3	B1-B2-B3	C1-C2-C3-C4	D1-D2-D3
Genetic parameters (solved problems)	A1-A3	B1-B2-B3	C1-C2-C3-C4	D1-D2-D3
Response and Correlated Response to selection (solved problems)	A1-A3	B1-B2-B3	C1-C2-C3-C4	D1-D2-D3

Evaluation Intended learning out comes matrix

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	general	
Written examination	A1.A2.A3.	B1-B2-B3	-	D2	25
Oral examination	A1.A2.A3.	B1.B2.B3	-	-	10
Practical examination	-		C1.C2.C3. C4.	D1,D3	15

Course Coordinator:

Prof. Dr. Mohammed Atef Helal

Head of Department:

Prof. Dr. Mohammed Atef Helal

Course specification **(2021 / 2022)**

1 - Basic Information:

Code number: --

Course title: **Farm Animal Production**

Academic Year: **Diploma of Animal Husbandry**

Total teaching hours: 144 h

Lectures: **48 h**

Practical: 96 h

2 - OVERALL AIMS OF THE COURSE:

Upon successful completion of the course, the student will be able to comprehend the principles of animal production regarding the fields of breeding, nutrition and management in the goal of raising animals of high production potential, gain preliminary competences in animal production and the factors affecting it in order to increase reproductive efficiency, understand the physiology of digestion in ruminants identify types and breeds of farm animals and their type of production and familiarized with the concepts involved in the application of genetic principles to animal improvement.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of this course, the graduate should be able to:

- a.1. Enumerate the principles of animal production regarding the fields of heredity, breeding, nutrition and management in the goal of raising animals of high production potential.
- a.2. Identify preliminary competences in animal production.
- a.3. Discuss the principles of animal breeding and genetics and how to apply them to increase the efficiency of farm animal production
- a.4. Describe the reproductive physiology in mammals and the factors affecting it in order to increase reproductive efficiency.
- a.5. Recognize the physiology of digestion in ruminants.
- a.6. List the nutritive requirements of farm animals.
- a.7. Identify types and breeds of farm animals and their type of production.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- b.1. analyze through using group discussions, and problem solving.
- b.2. interpret the research results necessary to complete assignments, and creativity through determining how to present material in an effective manner.
- b.3. plan for how to deal with and manage animal production enterprises
- b.4. compare the new trends for increasing and improving productive efficiency of farm animals.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- c.1. develop husbandry programs.
- c.2. record and analyze production records.
- c.3. apply genetic principles in improvement of farm animal production.
- c.4. judge farm animal production.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- d.11. Join and work effectively as part of a team.
- d.12. Efficiently make use of library facilities and IT tools.
- d.13. Design the spreadsheets, presentation packages and graph plotting.

4 - COURSE CONTENTS:

Topic	No. of hours		
	Lect.	Pract.	Total
Introduction to farm animals livestock sector in Egypt	2	4	6
Zoological classification of cattle	2	4	6
Major breeds of dairy cattle & Egyptian cattle and buffaloes	2	4	6
Mammary gland structure and milk secretion	2	4	6
Milking and milking machines	2	4	6
Raising dairy calves and heifers	2	4	6
Herd records	2	4	6
Dairy industry and essentials of establishing a profitable dairy farm	4	8	12
Selecting and judging dairy cattle	4	8	12
Reproduction and reproductive efficiency in dairy cattle	4	8	12
Lactation & Factors affecting milk yield and composition	2	4	6
Managing the dry dairy cow	2	4	6
Herd health program	2	4	6
Establishing the flock in sheep and goat & Reproductive performance in sheep and goat.	4	8	12
Wool and Mohair production & Milk production in sheep and goat.	2	4	6
System of sheep and goat production.	4	8	12
Factors affecting the economics and efficiency of beef cattle production	2	4	6
Beef production systems	2	4	6
Marketing Beef cattle	2	4	6
Total	48	96	144

5- TEACHING & LEARNING METHODS:

- 5.1. Lectures.
- 5.2. Practical sessions.
- 5.3. Self- learning activities

6. METHODS FOR STUDENTS With limited capabilities:-

- Special handling in the laboratory with extra time if needed.
- Ensure that all students with disabilities have equal access to educational opportunities and to help students to achieve academic and personal success.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	At the end of the academic year	At the end of the academic year	At the end of the academic year
<u>7.c grads</u>	50	20	30

8. LEARNING AND REFERENCE MATERIALS:

8.1. Essential textbooks

- Bourdon, R.M. 2000. Understanding Animal Breeding, 2nd Ed., Prentice Hall, Upper Saddle River, NJ 07458.
- Falconer, D. and Mackay, T., 1996. Introduction to Quantitative Genetics. 4th Edition. Longman.
- Flanders, F. and Gillespie, J.R. 2016. Modern Livestock and Poultry Production. 9th Ed. Delmar Publishers, USA.
- Parker, R.B. and Keillor, G. 2001. The Sheep Book: A Handbook for the Modern Shepherd. Ohio Univ. Press.
- Phillips, C.J.C., 2010. Principles of Cattle Production. 2nd Ed., CAB International Wallingford, Oxon Ox10 8De, UK.
- James.,R. Gillespie and Frank,B.Flanders. 2015.Modern livestock and poultry production.9th edition. Delmar, Cengage Learning,USA.
- Muir, W.M. and S.E. Aggrey . 2013. Poultry genetics, breeding and biotechnology. Library of Congress Cataloguing - in- Publication Data

8.2. Periodicals

- *Journal of Animal Science*
- *Poultry Science Journal*
- *Livestock Production Science*
- *Animal Science*

British Poultry Science

8.3. Web sites

- <http://www.vetmed.wsu.edu/depts.-vcpl/>
- <http://www.cc.nih.gov/>
- <http://www.acvcp.org/>
- <http://www.summitpk.com/pksolutions.htm>
- <http://www.analyticon.co.uk/pkpdpage.htm>

Course content ILOs Matrex:

TOPIC	K.U (A)	I.S (B)	P.P.S (C)	G.T.S (D)
Introduction to farm animals livestock sector in Egypt	A1	-	-	D2
Zoological classification of cattle	-A1	B1-B2-B3	C1-C4	D1-D3-
Major breeds of dairy cattle & Egyptian cattle and buffaloes	A7	B1-B2-B3	C1-C4	D1- D3-
Mammary gland structure and milk secretion	A4	B1-B2-B3	C1-C4	D1D3
Milking and milking machines	A4	B1-B2-B3	C1-C4	D1- D3-
Raising dairy calves and heifers	A1	B1-B2-B3	C1-C4	D1 -D3-

Herd records	A1-A2-A3	B1-B2-B3	C1-C4	D1- D3
Dairy industry and essentials of establishing a profitable dairy farm	A2-A3	B1-4	C1-C4	D1- D3
Selecting and judging dairy cattle	A1-A2-A3	B1-4	C1-C4	D1- D3
Reproduction and reproductive efficiency in dairy cattle	A1,A2.A4	B1-4	C1-C4	D1- D3
Lactation & Factors affecting milk yield and composition	A4	B1-4	C1-C4	D1- D3
Managing the dry dairy cow	A1,A2,A3	B1-4	C1-C4	D1- D3
Herd health program	A1,A2,A3	B1-4	C1-C4	D1- D3
Establishing the flock in sheep and goat & Reproductive performance in sheep and goat.	A4,5,6	B1-4	C1-C4	D1- D3
Wool and Mohair production & Milk production in sheep and goat.	A4,5,6	B1-4	C1-C4	D1- D3
System of sheep and goat production.	A2,3	B1-4	C1-C4	D1- D3
Factors affecting the economics and efficiency of beef cattle production	A2,3A	B1-4	C1-C4	D1- D3
Beef production systems	A2,3,7	B1-4	C1-C4	D1- D3
Marketing Beef cattle	A2,3,7	B1-4	C1-C4	D1- D3

Evaluation Ilos matrix:

TOOLS	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	practical	general	
Written examination	A1-A7	B1.B2.B3		D2.	50
Oral examination	A1.-A7	B1.B2.B3		.-	20
Practical examination		B4	C1-C4.	D1.D3.	30

Course Coordinator:

Head of Department:

Prof. Dr. Mohammed Atef Helal

Prof. Dr. Mohammed Atef Helal

Course specification (2021 / 2022)

1 - Basic Information:

Code number.....

Course title: **Animal Hygiene**

Academic Year: **Diploma degree in of veterinary medical science (Diploma of Animal Husbandry)**

Total teaching hours: . 96 hr.

Lectures: **48 hr**

Practical: 48 hr

2 - OVERALL AIMS OF THE COURSE:

Providing basic and detailed knowledge about animal hygiene in relation to veterinary public health for improving animal and human health. Additionally identify public health problems associated with farm animals and veterinary establishments and how to solve them to improve environment and human health.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1 Describing the principles of animal, poultry and environmental hygiene

A2 labeling the appropriate hygienic measures in farm animal houses.

A3 Stating the role of the environment around the animals (air, water and soil) in transmission of diseases and maintenance of infection.

A4 listing the appropriate management of animal wastes and control of hostile environmental conditions.

A5 Reciting the role of hygiene in disease prevention in farm animals

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1 Recommending the Use of principles and concepts of hygiene in solving hygienic problems in farm animals.

B2 Ability to collect and analyze data about occurrence, distribution and possible risk factors of animal diseases with public health importance.

B3- Comparing different strategies for prevention, control and eradication of infectious diseases.

B4- judging the appropriate method of management of animal wastes

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C.1. Collect representative samples from air, water source and soil for laboratory examination.

C.2. Apply simple chemical tests to judge air and water quality.

C.3- Construct a proper control of environmental pollution.

C.4- Diagnose animal diseases related to environmental conditions.

C.5- Obtain history about disease occurrence in a population

- C.6- Scan problems in the design of animal houses
 C.7- Employ the practical methods for control of animal diseases.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1 D1 work effectively as a member of a team in the delivery of services to community.
 D2 Support effective communication with the public, colleagues and appropriate authorities.
 D3 Apply communicating skills, have access to the internet and retrieve information
 D4 Write reports in a form that is satisfactory and understandable.
 D5 point out primary research techniques and critical evaluation

4 - COURSE CONTENTS:

Topics

TOPIC	Total hours	Hours for lecture	Hours for practical
Air Pollution	19	7	12
Water Pollution	25	7	18
Animal Housing and public health	10	10	-
Epidemiology	12	12	-
Animal Waste Management and public health	6	6	-
Combating of animal diseases	24	6	18
Total	96	48	48

5- TEACHING & LEARNING METHODS:

*Lectures

(using data show, white board, overhead projector and brain storming)

*Practical and small group sessions:

1: Practical training.

(Practical demonstrations, practice of skills, and discussions)

* Self learning

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- Preparation of posters
- Preparation of scientific reports.

* Audiovisual
 Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	After the end of 48 weeks	After the end of 48weeks	After the end of 48 weeks
7.c grads	25	10	15

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Text book in faculty library.

8-2: Recmonded books:

8-2.a Animal Health. Sainsbury. D (2003)

8-2.b Herd Health. Food Animal Production Medicine. Radostits et al. (1994)

8-2.c Managing Livestock Wastes to Preserve Environment (2000): Miner, J.R. et al. Iowa, Iowa State University Press.

8-2.d Farm animals and the environment. Phillips and Piggins (1992)

8-2.e Livestock health and housing. Sainsbury. D (1988)

8-2.f Environmental Contaminants: Assessment and Control (2004):Vallero, D.A. Amsterdam, Elsevier.

8-3: SUGGESTED books:

8-3.a Livestock Housing: Modern Management to Ensure Optimal Health and Welfare of farm animals (2013); Andres Aland, Thomas Banhazi, Wageningen Academic Publisher, Netherland.

8-3.b Veterinary Epidemiology (2013); Michael Thrusfield ; Butterworth-Heinemann

8.4: web sites and jouranlsand so on

- WWW.PubMed.com
- <https://www.gov.uk/guidance/controlling-disease-in-farm-animalswww.Vet.net.com>
- <https://www.gov.uk/guidance/keeping-livestock-healthy-disease-controls-and-prevention>
- <http://www.journals.elsevier.com/international-journal-of-veterinary-science-and-medicine/>
- <http://www.springer.com/environment/journal/11356>

Course content ILOs Matrex:

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Air Pollution	A1-A3	B1-B2	C1-C2-C5	D1-D2-D3D4-D5

Water Pollution	A1- A3	B1-B2	C1-C2- C3	D1-D2-D3-D4-D5
Animal Housing and public health	A1-A2	B2	-	D1-D2-D3-D4-D5
Epidemiology	A3-A5	B2- B3	-	D1-D2-D3-D4-D5
Animal Waste Management and public health	A4	B4	--	D1-D2-D3-D4-D5
Combating of animal diseases	A5	B3	C4-C6-C7	D1-D2-D3-D4-D5

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	general	
Written examination	A1.A2.A3.A4.A5.	B1		D4, D5	25
Oral examination	A1.A2.A3.A4.A5.	B1.B2.B3.B 4		D3	10
Practical examination		B1.B2.B3	C1.C2.C3. C4.C5,C6, C7	D1.D2.	15

Assessment ILOs Matrix:

Course Coordinator:

**Dr. Fatma Ali Abouelenien
Dr. Nagham Rafeek Elsaidy**

Head of Department:

Professor Dr. Tarek Balabel

Course specification (2021 / 2022)

1 - Basic Information:

Course title: **Animal nutrition and nutritional deficiency diseases**

Program on which the course is given: **Diploma degree in veterinary medical science
(Diploma of animal husbandry)**

Total teaching hours: 144 hrs

Lectures: **48 hrs**

Practical/small group sessions: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

To provide students with knowledge on nutrients function, metabolism and deficiency. Also the course enables student to prevent nutritional problems of animals.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1 Describe and illustrate the functions of nutrients
- A2 Identify metabolism and deficiency of nutrients
- A3 Listing the appropriate nutrients requirements of animals

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1 Modify nutrient requirement
- B2 Plan to prevent deficiency
- B3 Plan to prevent metabolic diseases

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1 Apply proper nutritional management of animals
- C2 Prevent nutritional diseases
- C3 Prevent metabolic diseases

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1 Show how to work effectively as a member of a team in the delivery of services to community.
- D2 Support effective communication with the public, colleagues and appropriate authorities.
- D3 Apply communicating skills, have access to the internet and retrieve information
- D4 Write reports in a form that is satisfactory and understandable.

D5 point out primary research techniques and critical evaluation.

4 - COURSE CONTENTS:

TOPIC	Total hours (Semester)	Hours for lecture	Hours for practical
Nutrients (functions, metabolism, deficiency and requirements)	48	24	24
Feedstuffs	24	-	24
Nutritional deficiency diseases	18	6	12
Metabolic diseases	36	12	24
Nutrition during heat stress	18	6	12
Total	144	48	96

5- TEACHING & LEARNING METHODS:

***Lectures**

(using data show, white board and brain storming)

***Practical and small group sessions:**

1: Practical training.

(Practical demonstrations, practice of skills, and discussions)

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- Preparation of scientific reports.

*** Audiovisual**

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	After the end of 48 weeks	After the end of 48 weeks	After the end of 46 weeks
7.c grads	50	20	30

8. LEARNING AND REFERENCE MATERIALS:

8.1. Essential Books (Text books)

- Animal Nutrition (P. McDonald, Seventh edition, 2010).
- Nutrient Requirements of Dairy Cattle: Seventh Revised Edition, 2001
- Vitamins in Animal Nutrition (Lee Russell McDowell, second edition 2000).
- Minerals in animal nutrition (Lee Russell McDowell, second edition 2003)

8.2. Periodicals, Web sites,..... etc

- Animal feed science journal
- Small ruminant research journal
- Dairy science journal
- Nutritional Abstract and Review
- Veterinary Bulletin.
- Archives of Animal Nutrition.
- Poultry science journal

Course content ILOs Matrex:

Content	ILOs			
	Knowledge and understanding	Intellectual	Professional and practical	General and transferable
Nutrients (functions, metabolism, deficiency and requirements)	a1, a2	B1,b2	C1	d1, d2, d3,d4, d5
Feedstuffs			C1,C2,C3	d1, d2, d3,d4, d5
Nutritional deficiency diseases	A2	B2	C2	d1, d2, d3,d4, d5
Metabolic diseases	A3	B3	C3	d1, d2, d3,d4, d5
Nutrition during heat stress	A1	B1	C1	d1, d2, d3,d4, d5

Assessment-ILOS matrix

Assessment	ILOS				Weighting of assessment
	Knowledge and understanding	Intellectual	Professional and practical	General and transferable	%
Practical exam			c1, c2,c3	d1, d2, d3,d4, d5	25%
Oral exam	a1, a2,a3	b1,b2,b3		d1, d2, d3,d4, d5	25%
Written exam	a1, a2,a3	b1,b2,b3			50%

Head of Department:

Prof. Dr. Abdelnasser Abdellatif Bakr

Course coordinator:

Dr. Eldsoky Elsaid Nassef

Course specification (2021 / 2022)

1 - Basic Information:

Course title: **Physiology of reproduction** (Animal physiology)..

Academic Year (Diploma of Animal Husbandry)

Total teaching hours: 96 hrs

Lectures: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

- a – to study hormone nature, types of hormones, hormonal cycle and types of hormone receptors.
- b-To provide students with deep understanding of the structure of endocrine gland and different types of hormones secreted from it.
- c-Students will have the basic knowledge about the male and female reproductive system functions
- d- Know semen production , how to collect semen sample
- e- Understand examination of semen
- f-The student should understand the stress hormones and effect of temperature on male fertility

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1- Describe the molecular mechanism of the function of each endocrine gland in the body.

A2- Identify the molecular mechanism of hormone action and the different hormonal interactions in the body.

A3- explain the mechanism of endocrine glands disorders and their impacts on male and female fertility

A4- define the basic knowledge about the male and female reproductive systems physiology, regulation and the endocrine factors that participate in normal sexual drive and fertility and the factors that may cause dysfunctions, infertility or sterility

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- evaluate of the reproductive performance of male animal through evaluation of the semen sample.

B2- analyze of the reproductive performance of female animal through measurement of different reproductive hormones.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

No practical part.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able:

D1-Coach and work in group.

D2-Classify different duties.

D3-Utilize computer and internet skills.

D4-Develop the ethical behaviours between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Hormones and hormonal cycle	28	28	-
gametogenesis	28	28	-
Pregnancy and parturition	12	12	-
Hormonal control of reproduction in farm animals	12	12	-
Exogenous factors affecting reproduction	12	16	-
Total	96	96	-

5- TEACHING & LEARNING METHODS:

* **Advanced lectures:** PowerPoint presentations including videos, and whiteboard Discussion and brain storming

***Practical and small group sessions:**

1: Practical training. (Practical demonstrations,

* **Self learning** practice of skills, discussions Microscopes and other facilities as Data show)

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- Preparation of posters
- Preparation of scientific reports.

* **Distance Teaching and Learning:** Using the Microsoft Teams platform, when necessary, such as during COVID-19 pandemics or when onsite (face-to-face) education is halted due to weather emergencies or other reasons. Distance teaching may be offered synchronous or non-synchronous

* **Audiovisual** :Video show.

Teaching and Learning Methods	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Advanced lectures	a1 to a4	b1 to b4		d1, d4
Practical sessions		b1 to b4		D1-d4
Self-Learning activities				d2, d3, d4
Distance Teaching and Learning	a1 to a4	b1 to b4		d1 , d3

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-

*Activation of office hours.

*Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination
7.b time	At the end of the academic year	At the end of the academic year
7.c grads	25	25

Evaluation Intended learning out comes

Methods	7. Student Assessment			
	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Written examination	A1-A4	B1-B4		D3
Oral examination	A1-A4	B1-B4		D4
Practical examination			C1-C4	D1-D4

KU, knowledge and understanding; IS, intellectual skills; PPS, practical and professional skills; GTS, general and transferable skills. KU, knowledge and understanding; IS, intellectual skills; PPS, practical and professional skills; GTS, general and transferable skills.

8. LEARNING AND REFERENCE MATERIALS:

8-1: Essential Books

- Animal Physiology. Richard W Hill , Gordon A Wyse , Margaret Anderson (4th Ed) ISBN: 9781605357379 Edition: 4 Paperback Oct 2017
- Principles of Animal Physiology (2016) 3rd edition. Christopher D. Moyes, Patricia M. Schulte
- Principles of Animal Physiology (2018) 3rd edition, Christopher D. Moyes, Patricia M. Schulte
- Eckert Animal Physiology: Mechanisms and Adaptations (1997) 4th Ed, David Randall , Warren Burggren
- Functional Anatomy and Physiology of Domestic Animals, (2017) 5th Edition, William O. Reece, Eric W. Rowe
- Cunningham's Textbook of Veterinary Physiology, 6th Edition - January 3, 2019
- Dukes' Physiology of Domestic Animals, (2015) 13th Edition, William O. Reece (Editor), , Jesse P. Goff , Etsuro E. Uemura
- COMPARATIVE ANIMAL PHYSIOLOGY (2020) 1st Edition, by Philip C. Withers Anatomy and Physiology of Farm Animals, 8th Edition, Anna Dee Fails, Christianne Magee
- Essentials of Animal Physiology, (2007) S. C. Rastogi
- Equine Exercise Physiology (2002), David Marlin, Kathryn J. Nankervis
- Guyton and Hall Textbook of Medical Physiology (Guyton Physiology) (2022) 14th Edition, by John E. Hall PhD , Michael E. Hall MD MSc.
- Sturkie's Avian Physiology (2015) • Sixth Edition • 2015
- The Physiology of Fishes (2016), By Suzanne Currie, David H. Evans

8-2: Recommended books:

- Ruchebusch, Y., Phaneuf, I. and Dunlop, R. (1991) Physiology of small and large Animals. B.C. Decker, Inc, Philadelphia, Hamilton.
- Swenson M.J, Reece, W.O. and Comstock (1993) Duke's Physiology of Domestic Animals. 11th edition, publishing Associates a division of Cornell University press. Ithaca and London.
- Gunningham, J. (1992) Text book of Veterinary Physiology. W.B. Saunders Company, Toronto, Montreal, Tokyo.
- Guyton, A. (1991) Text book of Medical physiology. 8th, W.B. Saunders Company.
- - Ganong, W.F. (1989) Review of Medical Physiology. 9th (Middle East edition) Appleton and Lang.
- 8.2.f- Periodicals, Web Sites, ... etc.

8-3: Egyptian Knowledge Bank:

- Animal Physiology, Beaver, BV and Höglund, DL. 2016. Academic Press, Elsevier Inc.
- Animal Physiology: An Environmental Perspective, by Patrick J. Butler, J. Anne Brown, et al. | Sep 23, 2020. Academic Press, Elsevier Inc.
- Principles of Animal Physiology, by Christopher Moyes and Patricia Schulte | Jan 15, 2015. Academic Press, Elsevier Inc.
- Animal Physiology: From Genes to Organisms, by Lauralee Sherwood, Hillar Klandorf, et al. | Jan 1, 2012. Academic Press, Elsevier Inc.
- Anatomy and Physiology of Farm Animals, by Anna Dee Fails and Christianne Magee | Jul 11, 2018. Academic Press, Elsevier Inc.
- Veterinary Anatomy Coloring Book: Animal Anatomy and Veterinary Physiology Coloring Book Vet Tech, Summer Sparks | Sep 22, 2020. Academic Press, Elsevier Inc.
- Functional Anatomy and Physiology of Domestic Animals, by William O. Reece and Eric W. Rowe | Aug 14, 2017, Academic Press, Elsevier Inc.
- Introduction to Animal and Veterinary Anatomy and Physiology, by Victoria Aspinall and Melanie Cappello | Dec 12, 2019. Academic Press, Elsevier Inc.
- Eckert Animal Physiology: Mechanisms and Adaptations, by David Randall | Nov 1, 2001, Academic Press, Elsevier Inc.
- Animal Physiology: Adaptation and Environment, by Knut Schmidt-Nielsen | Apr 10, 1997. Academic Press, Elsevier Inc.
- Das, DN. Paul, D. and Mondal, S. 2022. Emerging Issues in Climate Smart Livestock Production. Biological Tools and Techniques. Academic Press, Elsevier Inc.
- Avian (Poultry) Production: 2nd Revised and Enlarged Edition, by D. Sapkota, D. Narahari, J.D. Mahanta, 2017.
- Poultry Health: A Guide for Professionals, by Paul Barrow, Venugopal Nair, Susan Baigent, Robert Atterbury, Michael Clark, 2021.
- Poultry Science, 5th Edition, by Colin G. Scanes, Karen D. Christensen, 2019.

8.4. Scientific Journals

- Animals
- Animal physiology and biochemistry
- Cells
- Life science
- Fish physiology and biochemistry
- Stress
- Biomedicine
- Animal reproduction science
- Aquaculture
- Veterinary sciences
- Scientific report
- .frontier in veterinary science
- Journal of Animal Science.
- Livestock Production Science.
- British Journal of Animal Science.

- Egyptian Poultry Science
- Poultry Science Association
- American journal of poultry science
- British Poultry Science
- International journal of Poultry Science.
- Journal of Applied Poultry Research

8.5. Scientific websites

- The Egyptian Knowledge Bank: <https://www.ekb.eg/web/guest/home>
- <https://animalphys4e.sinauer.com/>
- <https://teachmephysiology.com/>
- <https://www.nature.com/subjects/animal-physiology>
- <https://sites.msudenver.edu/haysc/biology-courses/animal-physiology-bio-3360/>
- <https://www.acsedu.com/Courses/animal-biology-animal-husbandry-i-599.aspx>
- <https://animalphys4e.sinauer.com/quiz/>
- <https://askbiologist.asu.edu/explore/animal-physiology>
- <https://www.sinauer.com/media/wysiwyg/tocs/AnimalPhysiology3.pdf>
- <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/animal-physiology>
- <https://library.ivytech.edu/c.php?g=869309&p=6239318>
- DeLaval Dairy Supply. <http://www.delaval.com/en/-/Dairy-knowledge-and-advice/>
- Lactation Biology: <http://classes.aces.uiuc.edu/ansci308/index.html>
- Heat Detection and Timing of Insemination for Cattle. Penn State, College of Agricultural Sciences, Cooperative Extension. <https://extension.psu.edu/heat-detection-and-timing-of-insemination-for-cattle> accessed 08/09/2017.
- National Dairy Database: <http://www.inform.umd.edu:8080/edres/topic/agr/ndd>
- The Babcock Institute: <http://babcock.cals.wisc.edu>
- WWW Virtual Library for Dairy Production* (Oklahoma). <http://www.ansi.okstate.edu/library/dairy/>
- US Dairy Export Council: <http://www.usdec.org/about/whoweare.htm>
- The International Dairy Federation (IDF): <http://www.fil-idf.org/>
- Managing of dairy heifers: <http://www3.das.psu.edu/dcn/calfmgt/385/index.html>
- Management Practices Associated with High-Producing U.S. Dairy Herds (USDA): http://www.aphis.usda.gov/vs/ceah/cahm/Dairy_Cattle/drymgmt.htm
- A beginners guide to raising sheep <http://www.sheep101.info/201/feedwaterequip.html>
- <http://www.thepoultrysite.com/>

Evaluation Intended learning out comes

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	General	
Written examination	A1.A2.A3.A4,A5	B1-b2	-----.	D3,D4	25
Oral examination	A1.A2.A3.A4,A5	B1-b2	-----	D3,D4	25

Course Coordinator:

Prof. Dr. / Michel Fahmy Saad

Head of Department:

Prof.dr. Shawky Abdelhady Mahmoud

Topics	Hours	Knowledge & Understanding(a)					Intellectual Skills(b)				Practical (c)			General & Transferable Skills(d)			
		1	2	3	4	5	1	2	3	4	1	2	3	1	2	3	4
Hormones and hormonal cycle	28	✓	✓						-	-	-	-	-	✓	✓	✓	✓
gametogenesis	28			✓	✓		✓	✓	-	-	-	-	-			✓	✓
Pregnancy and parturition	12		✓	✓	✓		✓	✓	-	-	-	-	-	✓	✓	✓	✓
Hormonal control of reproduction in farm animals	12			✓		✓	✓	✓	-	-	-	-	-	✓	✓	✓	✓
Exogenous factors affecting reproduction	12				✓	✓	✓	✓	-	-	-	-	-	✓	✓	✓	✓



Kafrelsheikh University
Faculty of Veterinary Medicine



Kafrelsheikh University

Faculty of Veterinary Medicine

Department Clinical Pathology

Program Specification for Master Degree

(2021 - 2022)

Program Title:

Master of The Veterinary Science

(Clinical Pathology)



A- Administrative information:

- 1- **Awarding Body:** Kafrelsheikh University
- 2- **Teaching Body:** Faculty of Veterinary Medicine
- 3- **Department responsible:** clinical pathology
- 4- **Program Title:** clinical pathology
- 5- **Final award:** Diploma Degree
- 6- **Registration period:** one year
- 7- **Program Co- coordinator:** Prof. Dr.: Abdallah mokhbatly
- 8- **External evaluator:**
- 9- **Date of revision:** 9 / 2016
- 10- **Date of approval:** 9 / 2016

B- Professional Information

1-Programme Aims

By the completion of his study, the students and graduate will be capable:

- Qualify students and graduates to understand clinical pathology of different animals, poultry and fish and to solve field problems .
- Using different types of equipments and how to deal with it.
- Using the recent technology linked with field of studying
- To communicate effectively in written, verbal and graphical forms.

2- Academic standards:

Academic reference standards (ARS) adopted by the faculty committee No 1(14/9/2014)

3-Graduate attributes:

Upon successful completion of the program, the graduate has the ability for:



- 1) Application of the gained specific knowledge in laboratory diagnosis of infectious and non-infectious diseases.
- 2) Identification of problems in diagnosis and suggestion of accurate methods to overcome such problems.
- 3) Mastering skills in clinical biochemistry, , microbiology, parasitology and clinical pathology, and using appropriate biotechnological means in the clinical laboratory diagnosis.
- 4) Effective communication skills in professional veterinary and laboratory practice and leading professional work team in clinical laboratory diagnosis.
- 5) Decision making according to available data collected from performing laboratory investigations.
- 6) Effective use of the available resources to be quick, accurate and economic.
- 7) Awareness with his role in society development and community preservation through combating diseases.
- 8) Reflecting the commitment to act with integrity, credibility, and the rules of laboratory diagnosis of veterinary problems.
- 9) Realizing the importance of self and life-long learning and progress.

4-Intended Learning Outcomes (ILOs)

a) Knowledge and understanding

By the end of this program the graduate should be able to:

- a.1. Define basic principles and practice of Clinical biochemistry, Hematology, and clinical pathology.
- a.2. Recognize the principles and practice of microbiology and Clinical Parasitology.
- a.3. Identify the principles of laboratory safety (laboratory hazards and protective measures) and regulations.
- a.4. Apply efficiently the standards of quality standards in the clinical laboratory.
- a.5. Confirm the influence of practicing laboratory diagnosis on surrounding environment and human and animal health

b) Intellectual skills

By the end of this program the graduate should be able to:

- b.1. Analyze and judge laboratory diagnostic problems in clinical laboratory diagnosis and arranging them according to significance
- b.2. Solve diagnostic problems based on the laboratory findings
- b.3. Compare laboratory data with reference values and formulating diagnosis after excluding non-specific interpretation
- b.4. Assess risk for an item within clinical laboratory
- b.5. Allocate appropriate intellectual strategy and evidence based decisions to deal with laboratory diagnostic problems and make decisions

c-Professional and practical skills



By the end of this program the graduate should be able to:

- c.1. Master the basic practical skills in clinical biochemistry, , microbiology, clinical pathology and parasitology
- c.2. Write professional laboratory reports
- c.3. Interpret data according to the normal reference values to achieve accurate diagnosis.

d-General and transferable skill

By the end of this program, the graduate should be able to

- d.1. Communicate efficiently with teaching staff, colleagues and the community
- d.2. Utilize information technology in scientific research and publications.
- d.3. Update information and knowledge and exchange it with staff and colleagues.
- d.4. Identify and use different sources of information and knowledge in clinical pathology and other related topics.
- d.5. Respect the importance of team work and do good control of time.
- d.6. Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team.
- d.7. Use the tools important for self and continuous learning.

5- program structure (one academic year)

Courses – one academic year

	Lecture (hours/week)	Practical (hours/week)
Clinical pathology	3	2
General pathology	2	2
Microbiology	1	1
Parasitology	1	1
Biochemistry	1	2
Total	8	8

6-Teaching and Learning Methods:

The program features a variety of teaching approaches for different intended learning objectives, including lectures, practical and lab sessions, and seminars.

7- Studentassessment:



The program courses depends on different assessment ways:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills

Assessment of program intended learning outcomes

Tool or method	ILOs			
	K & U (a)	I.S (b)	P.P (c)	G.T (d)
Written	1-5	1,2,3		1-7
Oral	1-5	1,3,4		1-7
Practical		1,2,5	1-3	1-7

8-Marking scale as follow:-

Grade	Percentage
Excellent	> 90
Very good	>80
Good	>70
Pass	>60



Fail	weak	45 to less than 60
	very weak	Less than 45

9-Evaluation of program outcomes

Code	Evaluator	Tools	Sample
1	Postgraduate students	Questioners	20%
2	Stakeholder	Questioners & Open discussion	10
3	Alumni	Questioners	15
4	External examiners	report	1
5	External evaluators	report	1

10. Program Admission Requirements:

Applicant must normally satisfy the Faculty of Veterinary Medicine University of Kafrelsheikh general entrance and requirement.

- The applicant must have regular attendance in his courses according to the schedule of the faculty.

11. Regulations for progression of program

- Registration period for the Diploma in veterinary medicine sciences is one year after the approval date by the Faculty council, and it should not exceed a period of two years.
- The student should conduct the courses proposed by both department council and approved by postgraduate and research committee and faculty council



(article 32) in regulation law list and the student will entitled to apply for the exam. only after meeting attendance rate for each courses.

- c) The student should pass written, practical and oral exams successfully in all courses, and the grade will be estimated according to in regulation law list.
- d) The Faculty council has the right to deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- e) Registration will be during September of each year.
- f) Failure in or depriving from entering one or more course did not requires reexamination of successful passed courses.

12-Examination Regulations

- a- Time of written exam, 3 hours for each course that has 3 hours or more for lecture / practical /week. **If has less than 3 hours/week, the time of exam, is 2 hours only.**
- b-The final degree of each course which has 3 hours (lecture and practical) per week is **100 and less than 3 hours is 50 degrees and divided into 50% for written exam, and 50% for practical and oral exam.**

Program Co-coordinator:

Dr. Emad waded

Head of Department:

prof. Dr. Mohamed Fahmy



Matching program ILOs with ARS - Matrix

Prog. ILOs	ARS																	
	K&U (a)				I.S. (b)					P.P. (c)		G.T. (d)						
	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7
K&U	1,2	3	4	5														
I.S.					1	2	3	4	5									
P.P.										1	2,3							
G.T.												1	2	3	4	5	6	7

Program Specification Matrix

Diploma in Clinical Pathology

Courses Name	Total Contact hours/ course	No. of hours / week			K.U (a)					I.S (b)					P.P (c)			G.T (d)					
		Lect.	Lab.	Total	1	2	3	4	5	1	2	3	4	5	1	2	3	1	2	3	4	5	6
Clinical pathology	240	3	2	5	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
General pathology	192	2	2	4	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Microbiology	96	1	1	2	x		x		x	x	x	x		x	x	x	x	x	x	x	x	x	x
Parasitology	96	1	1	2	x		x		x	x	x	x		x	x	x	x	x	x	x	x	x	x
Biochemistry	144	1	2	3		x	x		x	x	x	x		x	x	x	x	x	x	x	x	x	x
Total	768	8	8	16																			



ARS for Diploma in Clinical Pathology

1) Graduate attributes

At the end of the program, graduate must be able to::

- 10) Application of the gained specific knowledge in laboratory diagnosis of infectious and non-infectious diseases.
- 11) Identification of problems in diagnosis and suggestion of accurate methods to overcome such problems.
- 12) Mastering skills in biochemistry, general pathology, microbiology, clinical pathology and parasitology and using appropriate biotechnological means in the clinical laboratory diagnosis.
- 13) Effective communication skills in professional veterinary and laboratory practice and leading professional work team in clinical laboratory diagnosis.
- 14) Decision making according to available data collected from performing laboratory investigations.
- 15) Effective use of the available resources to be quick, accurately and economically.
- 16) Awareness with his role in society development and community preservation through combating diseases.
- 17) Reflecting the commitment to act with integrity, credibility, and the rules of laboratory diagnosis of veterinary problems.
- 18) Realizing the importance of self and life-long learning and progress.

A) Knowledge and understanding

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Basics principles and practice of general pathology, biochemistry, microbiology, parasitology, and clinical pathology.	Basics, theories and specific knowledge in educational field and sciences related to professional practice
2)	Principles of laboratory safety and regulations	Ethical and legal principles related to professional practice
3)	Application of quality standards in the clinical pathology laboratory	Basics and principles of quality assurance in professional practice in the field of specialization
4)	Influence of practicing laboratory diagnosis on surrounding environment and human and animal health	Impact of professional practice on environment and work to preserve and maintain the environment



B) Intellectual skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Identification and analysis of laboratory diagnostic problems in clinical laboratory diagnosis and arranging them according to significance	Determination and analysis of professional problems in the field of specialization and arranging them according to priorities
2)	Solving diagnostic problems based on the laboratory data and evidence based diagnosis	Solving professional problems in specialization field
3)	Evaluating different laboratory data with normal and reference values and formulating diagnosis after excluding non-specific interpretation	Analytical reading of researches and scientific topics in the field of specialization
4)	Designing a Risk Assessment Form and performing a Risk Assessment for an item within clinical biochemistry laboratory	Risk assessment in professional practice.
5)	Using appropriate intellectual strategy and evidence based decisions to deal with laboratory diagnostic problems and make decisions	Professional decision making using available information

C) Professional and practical skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Performing the basic practical skills in general pathology, biochemistry, microbiology, parasitology, and clinical pathology	Applying professional skills in the field of specialization
2)	Writing professional laboratory reports with interpretation of data according to the normal reference values	Writing professional reports

D) General and transferable skill

Adopted ARS	NARS (Diploma)
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	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Effective communication with teaching staff, colleagues and the community	Effective communication
2)	Utilizing information technology in scientific research and publications.	Utilizing information technology to serve development of professional practice.
3)	Updating information and knowledge and exchange it with staff and colleagues.	Self-assessment and determination of personal educational needs.
4)	Identifying and using different sources of information and knowledge in clinical pathology and other related topics	Using different resources to obtain knowledge and information.
5)	Respecting the importance of team work and do good control of time.	Working in team and efficient time management.
6)	Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team	Leading a team in familiar professional contexts.
7)	Using the tools important for self and continuous learning	Self and continuous learning

أولا :برامج دبلومه الدراسات العليا

١ -مواصفات الخريج

خريج برنامج دبلومه الدراسات العليا في أي تخصص يجب أن يكون قادرا على:

١. تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
٢. تحديد المشكلات المهنية و اقتراح حلول لها
٣. إتقان المهارات المهنية واستخدام الوسائل التكنولوجية المناسبة في ممارسته المهنية
٤. التواصل و قيادة فرق العمل من خلال العمل المهني المنظمي
٥. اتخاذ القرار في ضوء المعلومات المتاحة
٦. توظيف الموارد المتاحة بكفاءة
٧. الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة
٨. التصرف بما يعكس الالتزام بالنزاهة و المصداقية و قواعد المهنة و تقبل المسائلة و المحاسبة
٩. إدراك ضرورة تنمية ذاته و الانخراط في التعلم المستمر

٢ -المعايير القياسية العامة

١ المعرفة و الفهم. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على فهم و

استيعاب كل من:

أ -النظريات والأساسيات والمعارف المتخصصة في مجال التعلم وكذا العلوم ذات العلاقة بممارسته المهنية



- ب- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص
 - ج- مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص
 - د- تأثير لممارسة المهنية على البيئة و العمل علي الحفاظ علي البيئة وصيانتها
- ٨

٢ المهارات الذهنية. ٢

- بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
- أ- تحديد و تحليل المشاكل في مجال التخصص و ترتيبها وفقا لأولوياتها
- ب- حل المشاكل المتخصصة في مجال مهنته
- ج- القراءة التحليلية للأبحاث و المواضيع ذات العلاقة بالتخصص
- د- تقييم المخاطر في الممارسات المهنية
- هـ- اتخاذ القرارات المهنية في ضوء المعلومات المتاحة

٣ المهارات المهنية. ٢

- بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
- أ- تطبيق المهارات المهنية في مجال التخصص
- ب- كتابة التقارير المهنية

٤ المهارات العامة و المنتقلة. ٢

- بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
- أ- التواصل الفعال بأنواعه المختلفة
- ب- استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية
- ج- التقييم الذاتي و تحديد احتياجاته التعليمية الشخصية
- د- استخدام المصادر المختلفة للحصول على المعلومات و المعارف
- هـ- العمل في فريق وإدارة الوقت
- و- قيادة فريق في سياقات مهنية مألوفة
- ز- التعلم الذاتي و المستمر



COURSE SPECIFICATION (2021 / 2022)

1 - Basic Information:

Code number:.....

Course title: Clinical Biochemistry

Academic Year: **Clinical pathology Diploma Program**

Total teaching hours: 144 h

Lectures: 48 hrs (48 weeks- 1hr/week)

Practical: 96 hrs (48 weeks- 2hrs/week)

2 - OVERALL AIMS OF THE COURSE:

By the end of this course, the student should acquire the concepts, principles and skills related to tests routinely carried out in a clinical biochemistry laboratory and are able to appropriate tests routinely carried out in a clinical biochemistry laboratory and be able to appropriate interpretation of the obtained results. The considered subjects are clinical enzymology, clinical endocrinology, liver functions, kidney functions, pancreatic and myocardial functions tests, tumor markers and principles of immunoassays and inflammatory process.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- a1: Recognize enzymes with clinical significance
- a2: Define metabolic disorders of carbohydrates
- a3: Describe liver, Kidney and myocardial function tests.
- a4: Specify Biochemical aspects blood gases, pH, electrolytes and acidbase balance
- a5: Explain metabolic disorders of hormones
- a6: List tumor and inflammatory markers
- a7: Identify methods of plasma protein separation

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- b1-Interpret biochemical laboratory findings of some metabolic disorders.
- b2-Relate the abnormalities in body function tests.
- b3: Analyse the collecting data with professionalism and adequate decision making.
- b4: Conclude the clinical significance of determination of different biochemical parameters and formulate a crosslink between them

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- c1: identify the different biochemical tests to determine the concentration serum components.
- c2: Perform laboratory test to estimate liver and kidney function tests.
- c3: Carryout the different laboratory tests to measure enzyme activity either kinetic or end point
- c4: Utilize the commercial kits or dipsticks in plasma or urine analysis.
- c5: Use gel electrophoresis and immune assays techniques in diagnosis of metabolic disorders

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- d.1. Communicate effectively with his professors, and colleagues.



- d.2. Utilize different sources of knowledge and information
- d.3. Use information technology to serve the professional practice.
- d.4. Manage time efficiently.

4 - COURSE CONTENTS:

Topic	No. of hours		
	Lectures	Practical	Total
1. Clinical Enzymology	6	10	16
2. Clinical endocrinology	4	6	10
3. Liver function tests.	6	12	18
4. Kidney function tests and urine analysis	6	12	18
5. Pancreatic functions	4	12	16
6. Metabolic dis orders of hormones	4	6	10
7. Myocardial function tests	2	6	8
8. Tumor markers	4	6	10
9. Blood gases, pH, electrolytes and acidbase balance	2	4	6
10. Methods of plasma protein separation	4	8	12
11. Inflammation and immunity	4	10	14
Total	48	96	144

5- TEACHING & LEARNING METHODS:

* **Advanced lectures:** PowerPoint presentations including videos, and whiteboard
Discussion and brain storming

* **Practical sessions:**

* **Self-Learning activities:** Mini reviews from the web and the library

Making individual reports about advance laboratory diagnosis of metabolic disorders.

* **Distance Teaching and Learning:** Using the Microsoft Teams platform, when necessary, such as during COVID-19 pandemics or when onsite (face-to-face) education is halted due to weather emergencies or other reasons. Distance teaching may be offered synchronous or non-synchronous.

Teaching and Learning Methods	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Advanced lectures*	a1 to a7	b1 to b4		d1, d4
Practical sessions		b1 to b4	c1 to c5	d2, d4
Self-Learning activities				d2, d3, d4
Distance Teaching and Learning	a1 to a7	b1 to b4	c1 to c5	d1 to d4

*Lectures and some practical topics may be offered face to face or via distance teaching and learning.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-

*Activation of office hours.

*Discussion with them during practical session.

7. STUDENT ASSESSMENT:-



7.a Used methods	Written examination	Oral examination	Practical examination	Activities
7.b time	At the end of the academic year	At the end of the academic year	At the end of the academic year	Allover the academic year
7.c grads	25	10	10	5

6.1. Methods	7. Student Assessment			
	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Written exams	a1 to a7	b1 to b4		d4
Practical exams			c1 to c5	d2, d3
Oral exams	a1 to a7	b1 to b4		d1
Student activities	a1, a3, a7			d1 to d4

KU, knowledge and understanding; IS, intellectual skills; PPS, practical and professional skills; GTS, general and transferable skills.

8. LEARNING AND REFERENCE MATERIALS:

8-1: Essential Books

- Nelson, David L., and Michael M. Cox. 2017. Lehninger Principles of Biochemistry. 7th ed. New York, NY: W.H. Freeman.
- Murray, R.K., Granner, D.K, Mayes, P.A. and Rodwell, V.W. (2006) Harper's Biochemistry. 27th Edition, McGraw-Hill, Health Profession Division, New York, 225.
- Ferrier, Denise R. (2017). Lippincott Illustrated Reviews: Biochemistry (7th edition). Philadelphia, PA: Wolters Kluwer Health.
- VOET, D., & VOET, J. G. (2011). Biochemistry. Hoboken, NJ, John Wiley & Sons.
- Voet, D., Voet, J. G., & Pratt, C. W. (2016). Fundamentals of biochemistry (5th ed.). John Wiley & Sons.
- Berg, J. M., Tymoczko, J. L. and Stryer, L. Biochemistry. Freeman, 7th edition, 2011
- Lodish, H., Berk, A., Zipursky, S. L., Matsudaira, P., Baltimore, D. and James Darnell, J. Molecular Cell Biology, Freeman, 7th edition 2013
- Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K. and Walter P. Molecular Biology of the Cell. Garland Science, 6th edition 2014
- Mathews, C. K. & Van Holde, K. E. & Ahern, K. G. Biochemistry. Addison Wesley, 4th edition, 2012. (
- Voet, D. & Voet, J. G. Biochemistry. 4th edition, 2013.
- Voet, D., Voet, J. G. & Pratt, C. W. Principles of Biochemistry. Wiley, 4th edition, 2013.

8-2: Recmonded books:

- Burtis, Ashwood and bruns (2006) clinical chemistry and molecular diagnostics 4th ed., USA, Elseveir.
- 8.2d Kaneko, Harvey and Bruss (2008) Clinical Biochemistry of Domestic Animals, 6th ed. Elsevir Inc.
- Devlin, Thomas M. 2011. Textbook of biochemistry: with clinical correlations. Hoboken, NJ: John Wiley & Sons.



- James H. Nichols, Carol A. Rauch, Michael Laposata 2013 Clinical Chemistry Quality in Laboratory Diagnosis (Kindle Edition)

8-3: Egyptian Knowledge Bank:

- Michael M, Srivastava R and Deans K (2019): Clinical Biochemistry: An Illustrated Colour Text, 6th Edition, Elsevier Ltd.
- Baynes J and Dominiczak M (2019): Medical Biochemistry, 5th Edition, Elsevier Ltd
- Koel M and Kaljurand M (2019): Green Analytical Chemistry: Edition 2, Royal Society of Chemistry.
- McPherson RA and Pincus MR (2017): Henry's Clinical Diagnosis and Management by Laboratory Methods, 23rd Edition, Elsevier Ltd.
- Donald V and Judith G (2011): Biochemistry, 4th Edition, Publisher: Wiley.

Scientific Journals

- International Journal of Biochemistry and Biophysics
- International Journal of Biochemistry and Molecular Biology
- International Journal of Biochemistry, Biophysics & Molecular Biology
- International Journal of Biological and Chemical Sciences
- Biochemistry
- Journal of molecular biochemistry

Scientific websites

- The Egyptian Knowledge Bank: <https://www.ekb.eg/web/guest/home>
- American Society for Biochemistry and Molecular Biology (ASBMB) <https://www.ascb.org/>
- American Society for Cell Biology (ASCB) <https://www.asbmb.org/>
- Biochemical Society (BS)
- <https://www.biochemistry.org/>
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Course Coordinator

Dr. Tarek Kamal Abuzaid

Head of Department

Prof. Dr. Samir Ahmed El-Shazly

Course Matrix for achievement of Intended Learning Outcomes

Topics	Hours	Knowledge & Understanding							Intellectual Skills				Practical & Professional Skills					General & Transferable Skills					
		1	2	3	4	5	6	7	1	2	3	4	1	2	3	4	5	1	2	3	4		
1. Clinical Enzymology	16	✓							✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
2. Clinical endocrinology	10					✓			✓	✓	✓	✓	✓							✓	✓	✓	✓
3. Liver function tests.	18	✓		✓					✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
4. Kidney function tests and urine analysis	18			✓					✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
5. Pancreatic functions	16		✓			✓			✓	✓	✓	✓		✓	✓					✓	✓	✓	✓
6. Metabolic disorders of hormones	10								✓	✓	✓	✓								✓	✓	✓	✓
7. Myocardial function tests	8			✓					✓	✓	✓	✓		✓	✓	✓				✓	✓	✓	✓
8. Tumor markers	10						✓		✓	✓	✓	✓	✓							✓	✓	✓	✓
9. Blood gases, pH, electrolytes and acidbase balance	6				✓				✓	✓	✓	✓								✓	✓	✓	✓
10. plasma proteins	12						✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓	✓	✓	✓
11. Inflammation and immunity	14						✓	✓	✓	✓	✓	✓					✓			✓	✓	✓	✓

KAFR ELSHEIKH UNIVERSITY
FACULTY OF VETERINARY MEDICINE
DEPARTMENT OF CLINICAL PATHOLOGY

Course specification
(2021-2022)

1-Basic information

Code number:

Course title: **CLINICAL PATHOLOGY**

Academic year or level: **DIPLOMA**

Specialty: **Diploma of clinical pathology**

Total teaching hours: 240 hrs (5 hours per week)

Lectures: 144 hrs

Practical: 96 hrs

2. OVERALL AIMS OF THE COURSE:

To provide student with basic knowledge and skills concerning clinical laboratory assays for diagnosis of diseases in different animals, birds and fish.

3. INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1- Demonstrate the different hematological techniques used in different clinical laboratories.

2- Describe the normal and abnormal structure of blood cells.

A3- Illustrate the normal and abnormal structure of bone marrow.

A4-Define the normal hematological values in different animals, birds and fish.

A5- List the different biochemical, immunological and parasitic techniques used in different clinical laboratories.

A6-Recognizes the normal biochemical values in different animals, birds and fish.

A7-Discuss the abnormal function of different organs such as liver, kidney, pancreas...

A8- Describe the major disorders of endocrine system.

A9-Illustrate the laboratory quality control and test validity.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- Interpret the abnormal blood picture

B2-Judge the abnormal blood cells.

B3- Differentiate between normal and abnormal structure of bone marrow.

B4- Evaluate the abnormal chemistry of blood and all body fluids.

B5- interpret the abnormal values of liver, kidney and pancreatic function tests.

B6- Select the abnormal values different body fluids.

3-C: Practical and professional skills:

By the end of the course, students should be able to:

C1-Obtaining proper blood and bone marrow samples from different animals.

C2- Perform complete blood count.

C3-Examine stained blood smears under light microscope.

C4- Compare between the normal and abnormal blood cells in different species including birds and fish.

C5- Collect proper samples and specimens from different body fluids and tissues.

C6- Perform all biochemical tests of blood and body fluids.

C7-Examine stained or unstained smears of urine sediments under light microscope.

C8-Examine smear of diluted fecal matter under light microscope.

C9- Investigate the abnormal function of different organs.

3-D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Coach and work in groups.

D2-Classify different duties

D3- Utilize computer and internet skills.

D4-Develop the ethical behaviors between students and staff members as well as among the students themselves.

4. COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Introduction and different laboratory techniques of clinical pathology	8	4	4
Clinical hematology	100	60	40
Clinical biochemistry	100	60	40
Clinical immunology	12	8	4
Clinical endocrinology	10	6	4
Case studies and urine analysis	10	6	4
Total	240	144	96

5-TEACHING & LEARNING METHODS:

5.1:- Lectures

(using data show and white board, brain storming)

5.2:- Practical and small group sessions:

1: Practical training

(Practical demonstrations, practice of skills, and discussions)

5.3:- self learning

(Computer researches and faculty library visits to prepare essays and presentations)

- Library researches.
- Internet researches.
- Discussion in the researches.

5.4:- Audiovisual

Video files in the lectures

6. METHODS FOR DISABLED STUDENTS:-

- Activation of office hours.
- Discussion with them during practical session

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	At the end of the year	At the end of the year	At the end of the year
7.c grads	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Department notes: available for students to purchase from bookshops in front of the faculty.
- Microscopes, slides and computer presentations used during teaching.

8-2: Recommended books:

- Coles (1989): veterinary clinical pathology
- Duncan and Prasse's (2003); Veterinary laboratory medicine, clinical pathology
- Stockham and Scott (2008) : fundamentals of veterinary clinical pathology

8.4: web sites and journals

- WWW.PubMed.com
- American journal of clinical pathology
- Journal of comparative pathology and clinical pathology
- www.Vet.net.com

Topic	I. L. Os.			
	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Introduction and different laboratory techniques of clinical pathology	A1,A9	-	C1	D1-D2-D3-D4
Clinical hematology	A1-A2-A3-A4	B1-B2-B3	C1-C2-C3-C4-C5	D1-D2-D3-D4
Clinical biochemistry	A5-A6-A7-A9	B5-B6	C5-C6-C9	D1-D2-D3-D4
Clinical immunology	A5	B4	C6-C9	D1-D2-D3-D4
Clinical endocrinology	A8	B4	C6-C9	D1-D2-D3-D4
Case studies and urine analysis	A1-A2-A3-A4-A5-A6-A7-A8-A9	B1-B2-B3-B4-B5-B6-	C2-C3-C4-C5-C6-C7-C9	D1-D2-D3-D4

ASSESSMENT Ilos Matrix:

TOOLS	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	practical	general	
Written examination	A1.A2.A3.A4.A5.A6.A7.A8.A9.	B3..B6.		D3	50
Oral examination	A1.A2.A3.A4.A5.A6.A7.A8. A9.	-		D4	25
Practical examination		B1.B2. B4.B5..	C1.C2.C3.C4.C5.C6.C7.C8.C9	D1,D2	25

Course coordinator:

Name : Prof. Dr. Abdalla Mekhbatly
Head of department of clinical pathology

Name: Prof. Dr. Mohamed Fahmy

Course specification (2021 / 2022)

1 - Basic Information:

Code number:

Course title: General Pathology.

Academic Year: Diploma of clinical pathology program

Total teaching hours: 192hrs

Lectures: 96hrs

Practical: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

The student will be able to:

- Define the basic pathogenesis of different diseases.
- Provide basic information about etiology, basic terminology, tissue response, tumors, and the markers of tumor.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1-Identify the pathogenesis of different animal affections with focus on cytokines and tumor markers role.

A2-Describe the gross and microscopic features of various pathological lesions related with clinical haematological and biochemical data.

A3-Recognize the basic terminology for various inflammatory and tumor lesions.

A4-Differentiate the cellular markers of different tumors.

A5-Identify the different types of tumors and different markers used in histochemistry for various body organs.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- Evaluate the histological features of pathological processes with the accurate stage in order to achieve proper diagnosis.

B2- Interpret the pathological affections correlated with the biochemical and hematological data.

B3- Judge the different microscopical findings to get appropriate interpretations of pathological cases.

B4- Distinguish between benign and malignant tumors depending on histological grading.

B5- Analyze and evaluate subject-specific theories and principles related to diagnosis and differential diagnosis of the different lesions and tumors.

B6- Differentiate between tumors and tumor-like lesions.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1- Detect tissue specimens for pathological diagnosis of small specimens or aspiration samples.

C2- Examine gross or microscopic lesions of inflammatory lesions and differentiate between the different types of tumors.

C3- Assign a report with the macro- and microscopical findings.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Coach and work in groups.

D2-Classify different duties

D3- Utilize computer and internet skills.

D4-Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
<i>Disturbances of cell metabolism</i>	44	22	22
<i>Inflammation and Repair</i>	34	17	17
<i>Disturbances of Circulation</i>	38	19	19
<i>Disturbances of growth and Neoplasia</i>	36	18	18
<i>Molecular basis of Carcinogenesis</i>	40	20	20
Total	192	96	96

5- TEACHING & LEARNING METHODS:

***Lectures:**

using data show, white board and over head projector.

***Practical and small group sessions:**

Practical training:Practical demonstrations, practice of skills, and discussions.

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

Histopathological Drawings.

Library researches.

Internet researches.

Discussion in the researches.

Preparation of scientific reports.

*** Audiovisual**

Television circle in the practical laboratory.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-

*Activation of office hours.

*Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	One examination at the end of the academic Year	One examination at the end of the academic Year	One examination at the end of the academic Year
<u>7.c grades</u>	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Practical Department Notes: available for students to purchase from the department.*

- Microscopes, slides, projector slides, Data show.

8-2: Recmended books:

- *Basics of Oncology* by Frederick O. Stephens and Karl Reinhard Aigner, Springer, USA, 2010.
- *Robbins & Cotran Pathologic Basis of Disease*. Vinay Kumar, Nelso Fausto, Abul Abbas. Saunders; 7 edition, USA, 2004.
- *Fundamentals of Toxicologic Pathology*. Wanda M. Haschek., Colin G. Rousseaux, Matthew A. Wallig. Academic Press; 2 edition, 2009, USA.

8-3: SUGGESTED books:

- *Veterinary pathology Textbook*. (By Thomas Carlyle Jones, Ronald Duncan Hunt and Norval W. King, - Wiley-Blackwell, U.S.A., 1997).
- Walter and Israel(1996): general pathology ,6th.
- *veterinary pathology: Jones, hunt and king (1997)*.
- *Pathology of demostic animals*. academic press. Jobb, K.V.F. Keennedy, B.C. and PALMER, N,(1985)

8.4: web sites and jouranlsand so on

- IVIS
- Environmental Protection Agency (EPA)
- Food and Drug Administration (FDA)
- PubMed
- Science direct

Intended learning out comes of the course

TOPIC	K.U (a)	IS (b)	P.P.S (c)	G.T.S (d)
<i>Disturbances of cell metabolism</i>	A1,A2, A3,A4, A5	B1,B3,B5, B6	C1,C2,C3	D1,D2,D3,D4
<i>Inflammation and Repair</i>	A1,A2, A3	B1,B2,B4	C1,C2	D1,D2,D3,D4
<i>Disturbances of Circulation</i>	A1,A2	B2,B4,B5	C2,C3	D1,D2,D3,D4
<i>Disturbances of growth and Neoplasia</i>	A3,A4, A5	B3,B6	C1,C2,C3	D1,D2,D3,D4
<i>Molecular basis of Carcinogenesis</i>	A1,A5	B6	C2,C3	D1,D2,D3,D4

Evaluation Intended learning out comes

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectua l	Practical	general	
Written examination	A1,A2,A3,A4,A5	,B5,B6		D3	50
Oral examination	A1,A2,A3,A4,A5	B1,B2, ,B4,B5		D4	25
Practical examination		B1,B2,B3,B4	C1,C2,C3	D1,D2,	25

Course Coordinator:

Prof. Dr. Eman Abdelaziz

Head of Department:

Prof. Dr. Ahmed Elsawak

Course specification
(2021 / 2022)

1 - Basic Information:

Course title: : parasitology

Academic Year: Diploma degree in Veterinary Science (Clinical pathology Department). **Total**

teaching hours: 96

Lectures: **48hrs**

Practical: **48hrs**

2- OVERALL AIMS OF THE COURSE:

To provide students with brief knowledge, skills and positive attitude concerning clinical parasitology in different animals, birds.

3- INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING (K.U):

By the end of the course students should be able to

A1-define briefly the fundamental concepts of Parasitology and with the technical vocabulary used in this field.

A2- discuss briefly how could arthropods are able to induce diseases in domesticated, certain wild animal, fish, birds and man.

A3-Identify briefly common taxa of arthropods based on morphological, biologic and geographical criteria and clinical observation.

A4-explainthe briefly behavior and ecology of different arthropod species and stages in the environment.

3-B- Intellectual skills (I.S)

By the end of the course student should be able to

B1-organize briefly the factors responsible for differentiating between infection and disease caused by various parasites.

B2-analyzebriefly the parasite-drug interaction and parasite-host interaction (Immune inter-relations between Parasite and the host).

B3- compare briefly between the diagnostic stages of different parasites.

3-C- Professional and practical skills (P.P.S)

By the end of the course student should be able to

C1-Diagnose the different parasitic infection in different hosts by simple direct and indirect methods.

C2- Select simple rational treatment and control programs for arthropods population based on his/her knowledge of arthropods biology.

3-D- General and transferable skills (G.T.S)

By the end of the course student should be able to

D1-Protect their-selves from infection with different zoonotic arthropods.

D2-Protect their society and environment from pollution with arthropods.

D3- Work in groups

D4- use the internet and media facilities

4. COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	practical
Introduction	5	5	0
Fecal examination	30	14	16
Blood examination	10	5	5
Examination of other body fluids and tissues	6	3	3
Examination for ectoparasites	30	14	16
Making permanent mounts of parasites	5	2	3
Serological diagnosis of parasitic diseases	10	5	5
Total	96	48	48

5:- TEACHING & LEARNING METHODS:

5.1:- Lectures

(computer based presentations and white board, brain storming)

5.2:- Practical sessions:

1: Practical training

(Practical demonstrations, practical skills for diagnosis, and discussions)

5.3:- self learning

(Computer searches and faculty library visits to prepare essays)

- Library searches.
- Internet searches.
- Discussion of the prepared essays.
- Parasitological figures and drawings.

5.4:- Audiovisual

Television circuit in the laboratories

6. METHODS FOR DISABLED STUDENTS:-

- Special handling in the laboratory with extra time if needed.
- Ensure that all students with disabilities have equal access to educational opportunities and to help students to achieve academic and personal success.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	At the end of 48 weeks	At the end of 48 weeks	At the end of 48 weeks
7.c grads	25	10	15

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- available notebooks and textbooks for students to purchase from bookstores.
- Overhead slide projectors, Dias, Microscopes, TV closed circuit, permanent slides and power presentations.

8-2: Recommended books:

- 1. Roberts, L. S. and J.J. Janovy. 2000. Foundations of Parasitology. 5th Edition, W.C.B. Company, U.K.
- 2. Urquhart G. M., J. Armour, J. L. Duncan, A.M. Dunn, F. W. Jennings. 2000. Veterinary Parasitology, Longman Scientific Technical, U.K.
- 3. Soulsby, E. J. L. 1986. Helminths, Arthropods and Protozoa of Domesticated Animals. The English Language Book Society Bailliere Tindall, London.
- 4. Georgi, J. R., M. E. Georgi and V. J. Theodorides. 1999. Parasitology for Veterinarians. 7th Ed. W.B. Saunders Company London.
- 5. Wall, R. and D. Shearer. 1997. Veterinary Entomology. Chapman and Hall.
- 6. Hendrix, C. M. 1998. Diagnostic Veterinary Parasitology. 2nd Edition. Mosby.

8-3: SUGGESTED MATERIALS:

Video tapes and CDs

8.4: web sites and journals

[WWW.PubMed.com](http://www.PubMed.com)

- **Parasitic Diseases**
<http://www.mic.ki.se/Diseases/c3.html>
- **Ectoparasites and Endoparasites**
<http://www.soton.ac.uk/~ceb/EctoEndodirectory/frontectoendo.htm>
- **WHO TDR Home Page** <http://www.who.int/tdr/>
- **DPDx -CDCs Division of Parasitic Diseases** <http://www.dpd.cdc.gov/dpdx/Default.htm>
- **Parasites and Parasitological Resources** <http://www.biosci.ohio-state.edu/~parasite/home.html>
- **CDC** <http://www.cdc.gov/>
- **Atlas of Medical Parasitology** <http://www.cdfound.to.it/HTML/atlas.htm>
- **David Gibson's Parasitological URLs** <http://www.diplectanum.dsl.pipex.com/purls/>
- International veterinary information services (IVIS)
- www.Vet.net.com
- Journal of Parasitology Research
- Advances in Parasitology
- Journal of veterinary Parasitology.

COURSE Ilos matrix

TOPIC	K.U (A)	I.S (B)	P.P.S (C)	G.T.S (D)
Introduction				D1-D2-D3-D4
Fecal examination	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Blood examination	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Examination of other body fluids and tissues	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4

Examination for ectoparasites	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Making permanent mounts of parasites	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Serological diagnosis of parasitic diseases	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4

Evaluation Ilos matrix:

TOOLS	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	practical	general	
Written examination	A1.A2.A3	B1.B2.B3		.D3.D4	25
Oral examination	A1.A2.A3	B1.B2.B3		.D3.D4	10
Practical examination		B3	C1.C2.	D1.D2.	15

Course coordinators:

Name:Prof. Dr. Mahmoud A. Elseify

Head of the department

Name:Prof. Dr. Reda Khalafalla



Kafrelsheikh University
Faculty of Veterinary Medicine



Kafrelsheikh University

Faculty of Veterinary Medicine

Department of Poultry Diseases

Program Specification for Master Degree

(2021 - 2022)

Program Title:

Master of The Veterinary Science

(Poultry and Rabbit Diseases)

A- Administrative information:

- 1- **Awarding Body:** Kafrelsheikh University
- 2- **Teaching Body:** Faculty of Veterinary Medicine
- 3- **Department responsible:** Poultry Diseases
- 4- **Program Title:** Poultry and Rabbit Diseases
- 5- **Final award:** Diploma Degree
- 6- **Registration period:** one year
- 7- **Program Co- coordinator:** Prof. Dr. Moshira Elabbasy
- 7- **External evaluator:**

B- Professional Information

1- Programme Aims

- The program aims to qualify students and graduates to understand Poultry Diseases for improving economic and productive efficiency of poultry and rabbit farms.
- A Good grade in Diploma can serve as a basis for admission to master of veterinary medical science in the field of Poultry and Rabbit Diseases

2- Academic standards:

Academic reference standards (ARS) adopted by the faculty committee No 1(14/9/2014)

3-Graduate attributes:

At the end of the program, graduate must be able to:

- 3.1. Apply the gained specific knowledge and the relevant ones in professional practice.
- 3.2. Identify the professional problems and suggest solutions of the focus area.
- 3.3. Show satisfactory interpersonal and communication skills in his professional practice.
- 3.4. Communicate effectively and lead work team through professional scale.
- 3.5. Make decision according to the available information
- 3.6. Use of the available resources efficiently
- 3.7. Awareness with his role in society development and community preservation.
- 3.8. Reflects the commitment to act with integrity, credibility, and the rules of profession

3.9. Realize the importance of self and life-long learning.

4-Programme outcomes [intended learning outcomes (ILOs)]

a. Knowledge and understanding:

By the end of this program the graduate should be able to:

- a.1. Identify the different terms of poultry diseases, rabbits diseases, host-parasite relationship and the association between the disease and epidemiology.
- a.2. Recognize the molecular characterization of bacterial, viral, parasitic, and mycotic diseases
- a.3. List the different concepts of advanced quality measures in poultry disease profession and education.
- a.4. Define the requirement of national and regional poultry fields in line with professional ethics.
- a.5. List factors affecting samples taking time poultry and rabbits diseases.

b- Intellectual Skills

By the end of this program the graduate should be able to:

- b.1. Analyze data about occurrence, distribution and possible risk factors of diseases
- b.2. Investigate the efficiency of farm hygiene in relation to diseases occurrence.
- b.3. Illustrate the disease problems among birds populations to provide suitable means for control
- b.4. Detect the most important diseases affecting different poultry and rabbits.
- b.5. Make decisions based on appropriate intellectual strategy and evidence to deal with laboratory diagnostic problems.

c- Professional and Practical Skills

By the end of this program the graduate should be able to:

- c.1. Apply the clinical examination and postmortem for diagnosis of poultry diseases
- c.2. Apply dosing, sampling, labeling and preservation of samples.
- c.3. Use appropriate basic laboratory equipment safely and efficiently.
- c.4. Apply egg inoculation.
- c.5. Examine serological tests and different isolation methods for different causative agents

d. General and transferable skills:

At the end of the programme, graduate must be able to:

- d.1. Communicate effectively in different ways with his professors, collages and poultry owner (s).

- d.2. Utilize information technology to serve improvement of professional practice.
- d.3. Self assessment and determine educational needs.
- d.4. Present research findings in oral and written using appropriate. power point, word, excel and database.
- d.5. Work in multidisciplinary team and manage time and wok in research group.
- d.6. Lead team under different professional circumstances.
- d.7. Self and life-long learning

5-program structure:

A: Program duration: one year

B: Program courses

Course title	No of hours/week	Practical (hours/week)
Poultry and rabbit diseases	2	2
Poultry and rabbit parasitology and microbiology	1	1
physiology of poultry	1	1
Poultry nutrition and hygiene	2	2
Poultry pathology	2	2
Total	8	8

6-Teaching and Learning Methods:

The program features a variety of teaching approaches for different intended learning objectives, including lectures, practical and lab sessions, field visits and seminars.

7- Student assessment:

The program courses depends on different assessment ways:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.

3- Oral examination	For assessment of knowledge and Intellectual skills
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Assessment of program intended learning outcomes

Tool or method	ILOs			
	K & U (a)	I.S (b)	P.P (c)	G.T (d)
Written	1-4	1,2,4,5		1-7
Oral	1-4	1,3,4,5		1-7
Practical		1,2	1-5	1-7

8-Marking scale as follow:-

Grade		Percentage
Excellent		> 90
Very good		>80
Good		>70
Pass		>60
Fail	Weak	45 to less than 60
	very weak	Less than 45

9-Evaluation of program outcomes

Code	Evaluator	Tools	Sample
1	Postgraduate students	Questioners	20%
2	Stakeholder	Questioners & Open discussion	10
3	Alumni	Questioners	15
4	External examiners	report	1
5	External evaluators	report	1

10. Program Admission Requirements:

Applicant must normally satisfy the Faculty of Veterinary Medicine University of Kafrelsheikh general entrance and requirement.

- The applicant must have regular attendance in his courses according to the schedule of the faculty.

11. Regulations for progression of program

- a) Registration period for the Diploma in veterinary medicine sciences is one year after the approval date by the Faculty council, and it should not exceed a period of two years.
- b) The student should conduct the courses proposed by both department council and approved by postgraduate and research committee and faculty council (article 32) in regulation law list and the student will entitled to apply for the exam. only after meeting attendance rate for each courses.
- c) The student should pass written, practical and oral exams successfully in all courses, and the grade will be estimated according to in regulation law list.
- d) The Faculty council has the right to deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- e) Registration will be during September of each year.
- f) Failure in or depriving from entering one or more course did not requires reexamination of successful passed courses.

12-Examination Regulations

- a- Time of written exam, 3 hours for each course that has 3 hours or more for lecture / practical /week. **If has less than 3 hours/week, the time of exam, is 2 hours only.**
- b-The final degree of each course which has 3 hours (lecture and practical) per week is **100 and less than 3 hours is 50 degrees and divided into 50% for written exam, and 50% for practical and oral exam.**

Program Co-coordinator
Department:

Head of

Prof. Dr. Mahmoud Mousa

Prof. Dr. Moshira Elabbasy

Matching program ILOs with ARS - Matrix

Prog ILOs	ARS																	
	K&U (a)				I.S. (b)					P.P. (c)		G.T. (d)						
	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7
K&U	1	2	3	4,5														
I.S.					1	2	3	4	5									
P.P.										1,2,3	4,5							
G.T.												1	2	3	4	5	6	7



ARS for Diploma in Poultry and Rabbit Diseases

1) Graduate attributes

At the end of the program, graduate must be able to::

- 1) Apply the gained specific knowledge and the relevant ones in professional practice.
- 2) Identify the professional problems and suggest solutions of the focus area.
- 3) Show satisfactory interpersonal and communication skills in his professional practice.
- 4) Communicate effectively and lead work team through professional scale.
- 5) Make decision according to the available information
- 6) Use of the available resources efficiently
- 7) Awareness with his role in society development and community preservation.
- 8) Reflect the commitment to act with integrity, credibility, and the rules of profession
- 9) Realize the importance of self and life-long learning.

A) Knowledge and understanding

Adopted ARS		NARS (Diploma)	
	<i>By the end of this program the graduate should understand and accommodate the following:</i>		<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Basics principles and practice of virology, pathology, Microbiology, parasitology, clinical nutrition and hygiene and poultry and rabbit diseases		Basics, theories and specific knowledge in educational field and sciences related to professional practice
2)	Principles of laboratory safety and regulations (laboratory hazards and protective measures).		Ethical and legal principles related to professional practice
3)	Application of quality standards in the poultry and rabbits diseases		Basics and principles of quality assurance in professional practice in the field of specialization
4)	Basis of diagnostic methods of poultry and rabbits diseases causes		Impact of professional practice on environment and work to preserve and maintain the environment

B) Intellectual skills

Adopted ARS		NARS (Diploma)	
	<i>By the end of this program the graduate should understand and accommodate the following:</i>		<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Identification poultry and rabbits diseases problems		Determination and analysis of professional problems in the field of

		specialization and arranging them according to priorities
2)	Solving diagnostic problems based on the laboratory data and evidence based diagnosis	Solving professional problems in specialization field
3)	Evaluating different poultry and rabbits diseases data with normal and reference values and formulating diagnosis after excluding non-specific interpretation	Analytical reading of researches and scientific topics in the field of specialization
4)	Designing a Risk Assessment Form and performing a Risk Assessment for an item within poultry and rabbits diseases	Risk assessment in professional practice.
5)	Using appropriate intellectual strategy and evidence based decisions to deal with laboratory diagnostic problems and make decisions	Professional decision making using available information

C) Professional and practical skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Performing the basic practical skills in poultry and rabbits diseases, microbiology, pathology, parasitology, nutrition and hygiene	Applying professional skills in the field of specialization
2)	Writing professional case reports with interpretation of data according to the normal reference values	Writing professional reports

D) General and transferable skill

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Effective communication with teaching staff, colleagues and the community	Effective communication
2)	Utilizing information technology in scientific research and publications.	Utilizing information technology to serve development of professional practice.
3)	Updating information and knowledge and exchange it with staff and colleagues.	Self-assessment and determination of personal educational needs.
4)	Identifying and using different sources of information and knowledge in poultry and rabbits diseases and other related topics	Using different resources to obtain knowledge and information.
5)	Respecting the importance of team work and do	Working in team and efficient time

	good control of time.	management.
6)	Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team	Leading a team in familiar professional contexts.
7)	Using the tools important for self and continuous learning	Self and continuous learning

أولاً: برامج دبلومه الدراسات العليا

١- مواصفات الخريج

خريج برنامج دبلومه الدراسات العليا في أي تخصص يجب أن يكون قادراً على:

١. تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
٢. تحديد المشكلات المهنية و اقتراح حلولاً لها
٣. إتقان المهارات المهنية واستخدام الوسائل التكنولوجية المناسبة في ممارسته المهنية
٤. التواصل و قيادة فرق العمل من خلال العمل المهني المنظمي
٥. اتخاذ القرار في ضوء المعلومات المتاحة
٦. توظيف الموارد المتاحة بكفاءة
٧. الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة
٨. التصرف بما يعكس الالتزام بالنزاهة و المصداقية و قواعد المهنة و تقبل المسائلة و المحاسبة
٩. إدراك ضرورة تنمية ذاته و الانخراط في التعلم المستمر

٢- المعايير القياسية العامة

١ المعرفة و الفهم. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على فهم و استيعاب كل من:

- أ- النظريات و الأساسيات و المعارف المتخصصة في مجال التعلم وكذا العلوم ذات العلاقة بممارسته المهنية
- ب- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص
- ج- مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص
- د- تأثير لممارسة المهنية على البيئة و العمل على الحفاظ على البيئة و صيانتها

٨

٢ المهارات الذهنية. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على:

- أ- تحديد و تحليل المشاكل في مجال التخصص و ترتيبها وفقاً لأولوياتها
- ب- حل المشاكل المتخصصة في مجال مهنته
- ج- القراءة التحليلية للأبحاث و المواضيع ذات العلاقة بالتخصص
- د- تقييم المخاطر في الممارسات المهنية
- هـ- اتخاذ القرارات المهنية في ضوء المعلومات المتاحة

٣ المهارات المهنية. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على:

- أ- تطبيق المهارات المهنية في مجال التخصص
- ب- كتابة التقارير المهنية

٤ المهارات العامة و المنتقلة. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على:

- أ-التواصل الفعال بأنواعه المختلفة
- ب-استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية
- ج-التقييم الذاتي و تحديد احتياجاته التعلميه الشخصية
- د-استخدام المصادر المختلفة للحصول على المعلومات و المعارف
- هـ-العمل في فريق وإدارة الوقت
- و-قيادة فريق في سياقات مهنية مألوفة
- ز-التعلم الذاتي و المستمر

Course specification
(2021 / 2022)

1 - Basic Information:

Course title: Poultry and Rabbit Diseases
Academic Year or Level: Poultry and Rabbit Diseases
Total teaching hours: 192 hrs
Lectures: 96
Practical: 96

2 - OVERALL AIMS OF THE COURSE:

Providing advanced knowledge about viral, mycotic, and parasitic diseases of poultry and other avian species for avian disease diploma students that will enable them to deal with different problems related to poultry diseases that they will probably face during their future career either in governmental bodies or private sector.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1- Describe and diagnose avian and rabbit diseases
- A2- Describe treatment and solutions for poultry diseases and other managerial problems
- A3-Determine and take decisions about introducing new vaccines and medicines related to poultry in the country.
- A4-Illustrate the causes, pathogenesis, clinical signs, post-mortem findings, laboratory investigations, treatments for the most important poultry and rabbit diseases (Viral, bacterial, fungal, and parasitic diseases)

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1-Interpret of the most important clinical signs and lesions of diseased poultry and rabbits.
- B2-Adopt the proper management programs for poultry farm .
- B3-Manage the different clinical situations in poultry and rabbit diseases.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1-Perform clinical examination on diseased poultry and rabbits.
- C2-perform necropsy procedure on dead and euthanized poultry and rabbits.
- C3-aware of methods of collecting appropriate samples for laboratory diagnosis.
- C4-familiar with methods of proper transportation of samples.
- C5-perform laboratory isolation of avian pathogens

C6-Do sensitivity testing.

C7-Prescribe the proper remedies for an affected farm.

3- D: GENERAL AND TRANSFERABLE SKILLS:

By the end of studying the course, the graduate should be able to:

D1- be aware of OIE regulations about epidemic and transboundary diseases of poultry

D2- Coach and work in groups.

D3- Utilize computer and internet skills.

D4-Develop the ethical behaviors between students and staff members as well as among the students themselves.

4. COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Newcastle disease	12	6	6
Avian influenza + duck viral diseases	24	12	12
Gumboro + IB + ILT	24	12	12
Neoplastic diseases	12	6	6
Adenovirus infection	12	6	6
Mycotic diseases	12	6	6
Salmonella infection	12	6	6
Fowl cholera	12	6	6
Diseases of water fowl	12	6	6
Clostridia + coryza	12	6	6
Emerging diseases	12	6	6
Rabbit diseases	12	6	6
Nutritional diseases	12	6	6
Parasitic & miscellaneous	12	6	6
Total	192	96	96

5- TEACHING & LEARNING METHODS:

*Lectures

(Using data show, white board and overhead projector)

*Practical and small group sessions:

1: Practical training.

(Practical demonstrations, practice of skills, and discussions)

* Self learning

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches..
- Preparation of posters
- Preparation of scientific reports.

* Audiovisual

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with students during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	by the end of the year (48 th week)	by the end of the year (48 th week)	by the end of the year (48 th week)
<u>7.c grads</u>	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Overhead projections, slides and computer presentations used during teaching.
- Handouts

8-2: Recomend books:

- Poultry Diseases. 6th ed. by F. Jordan.
- Diseases of Poultry. 11th ed. by Y.M. Saif.
- Commercial Rabbit Production. 1st ed. by Osama.

8.4: web sites and jouranlsand so on

- WWW.PubMed.com
- WWW.science direct.com
- WWW.OIE.com

Intended learning out comes of each topic

TOPIC	K.U (a)	IS (b)	P.P.S (c)	G.T.S (d)
Newcastle disease	A1	B1	C1-C3	D1-D2-D4
Avian influenza + duck viral diseases	A1	B1	C1-C3	D1-D2-D3-D4
Gumboro + IB + ILT	A1-A2-A3-A4	B1	C2	D1-D2-D3-D4
Neoplastic diseases	A1	B1	C1-C3	D1-D2-D3-D4
Adenovirus infection	A1	B1	C1-C3	D1-D2-D3-D4
Mycotic diseases	A4	B1	C1-C3	D1-D2-D3-D4
Salmonella infection	A1-A2-A3-A4	B1	C2	D1-D2-D3-D4
Fowl cholera	A1-A2-A3-A4	B1-B2-B3	C2	D1-D2-D3-D4
Diseases of water fowl	A1-A2-A3-A4	B1-B2-B3	C5-C6-C7	D1-D2-D3-D4
Clostridia + coryza	A2	B1-B2-B3	C3	D1-D2-D3-D4
Emerging diseases	A3	B2-B3	C5	D1-D2-D3-D4
Rabbit diseases	A1-A2-A3-A4	B1-B2-B3	C2	D1-D2-D3-D4
Nutritional diseases	A1-A2	B1-B2-B3	C5	D1-D2-D3-D4
Parasitic & miscellaneous	A1-A2	B1-B2-B3	C1-C2	D1-D2-D3-D4

Intended learning out comes Evaluation

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	general	
Written examination	A1-A2-A3-A4	B1-B2-B3		D1	50
Oral examination	A1-A2-A3-A4	B1-B2-B3		D4	25
Practical examination		B3	C1-C2-C3-C4- C5-C6-C7	D2.,D3	25

Course Coordinator:

Prof. Dr. Mahmud M. Ismail

Head of Department:

Prof. Dr. Moshira Elabasy

KAFRELSHEIKHUNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF PARASITOLOGY

Course specification

(2016 / 2017)

1- BASIC INFORMATION

Code No.: Poultry and rabbits Microbiology and Parasitology

Academic Year: Poultry and Rabbit Diseases

Total teaching hours: 96 h

Lectures: 48 h

Practical: 48h

2- OVERALL AIMS OF THE COURSE:

- **To provide students with brief knowledge, skills and positive attitude concerning Microbiology and parasites of poultry and rabbits.**
- .

3- INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING (K.U):

By the end of the course students should be able to

A1-define the briefly concepts of Parasitology and Microbiology with the technical vocabulary used in this field.

A2- discuss briefly how could parasites, fungus and bacteria are able to induce diseases in birds and rabbits.

A3-Identify briefly common taxonomy of parasites, fungus and bacteria based on morphological, biologic and geographical criteria and clinical observation.

A4-explain briefly the immunological response of the poultry and rabbits to the causative microorganisms

3-B- Intellectual skills (I.S)

By the end of the course student should be able to

B1-organizebriefly the factors responsible for differentiating between infection and disease caused by various parasites and microorganisms

B2-analyzebrieflythe parasite-drug interaction and parasite-host interaction (Immune inter-relations between microorganism and the host).

B3- compare briefly between the diagnostic stages of different microorganisms

3-C- Professional and practical skills (P.P.S)

By the end of the course student should be able to

C1-Diagnose the different parasitic infection in different hosts by simple direct and indirect methods.

C2-Diagnose the different bacterial and mycotic infection in different hosts by simple direct and indirect methods.

C3- Select rational treatment and control programs for different microorganisms

3-D- General and transferable skills (G.T.S)

By the end of the course student should be able to

D1-Protect their-selves from infection with different zoonotic microorganisms.

D2-Protect their society and environment from pollution with microorganisms.

D3- Work in groups

D4- use the internet and media facilities

4. COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Practical
Introduction	5	5	0
Helminthes of poultry	30	14	16
Arthropods of poultry	10	5	5
Protozoa of poultry	6	3	3
Bacteriology	30	14	16
Mycology	5	2	3
Immunology	10	5	5
Total	96	48	48

5: TEACHING & LEARNING METHODS:

5.1:- Lectures

(Computer based presentations and white board, brain storming)

5.2:- Practical sessions:

1: Practical training

(Practical demonstrations, practical skills for diagnosis, and discussions)

5.3:- self learning

(Computer searches and faculty library visits to prepare essays)

- Library searches.
- Internet searches.
- Discussion of the prepared essays.
- Parasitological figures and drawings.

5.4:- Audiovisual

Television circuit in the laboratories

6. METHODS FOR DISABLED STUDENTS:-

- Special handling in the laboratory with extra time if needed.
- Ensure that all students with disabilities have equal access to educational opportunities and to help students to achieve academic and personal success.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	At the end of 48 weeks	At the end of 48 weeks	At the end of 48 weeks
<u>7.c grads</u>	25	10	15

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Available notebooks and textbooks for students to purchase from bookstores.
- Overhead slide projectors, Dias, Microscopes, TV closed circuit, permanent slides and power presentations.

8-2: Recmended books:

- 1. Roberts, L. S. and J.J. Janovy. 2000. Foundations of Parasitology.5th Edition, W.C.B. Company, U.K.
- 2. Urquhart G. M., J. Armour, J. L. Duncan, A.M. Dunn, F. W. Jennings. 2000. Veterinary Parasitology, Longman Scientific Technical, U.K.
- 3. Soulsby, E. J. L. 1986. Helminths, Arthropods and Protozoa of Domesticated Animals. The English Language Book Society BailliereTindall, London.
- 4. Georgi, J. R., M. E. Georgi and V. J. Theodorides. 1999. Parasitology for Veterinarians. 7th Ed. W.B. Saunder Company London.
- 5. Wall, R. and D. Shearer. 1997. Veterinary Entomology. Chapman and Hall.
- 6. Hendrix, C. M. 1998. Diagnostic Veterinary Parasitology.2nd Edition.Msoby.

8-3: SUGGESTED MATERIALS:

Video tapes and CDs

8.4: web sites and jounrnl

[WWW.PubMed.com](http://www.PubMed.com)

○ **Parasitic Diseases**

<http://www.mic.ki.se/Diseases/c3.html>

○ **Ectoparasites and Endoparasites**

<http://www.soton.ac.uk/~ceb/EctoEndodirectory/frontectoendo.htm>

○ **WHO TDR Home Page** <http://www.who.int/tdr/>

○ **DPDx -CDCs Division of Parasitic Diseases**

<http://www.dpd.cdc.gov/dpdx/Default.htm>

○ **Parasites and Parasitological Resources** <http://www.biosci.ohio-state.edu/~parasite/home.html>

○ **CDC** <http://www.cdc.gov/>

○ **Atlas of Medical Parasitology** <http://www.cdfound.to.it/HTML/atlas.htm>

○ **David Gibson's Parasitological URLs**

<http://www.diplectanum.dsl.pipex.com/purls/>

○ International veterinary information services (IVIS)

○ www.Vet.net.com

○ Journal of Parasitology Research

○ Advances in Parasitology

○ Journal of veterinary Parasitology.

COURSE Ilos matrix

TOPIC	K.U (A)	I.S (B)	P.P.S (C)	G.T.S (D)
Introduction				D1-D2- D3-D4
Helminthes of poultry	A1-A2-A3-	B1-B2- B3	C1-C3	D1-D2- D3-D4
Arthropods of poultry	A1-A2-A3-	B1-B2- B3	C1-C3	D1-D2- D3-D4
Protozoa of poultry	A1-A2-A3-	B1-B2- B3	C1-C3	D1-D2- D3-D4
Bacteriology	A1-A2-A3-	B1-B2- B3	C1-C2	D1-D2- D3-D4
Mycology	A1-A2-A3-	B1-B2- B3	C1-C2	D1-D2- D3-D4
Immunology	A4	B1-B2- B3	C1-C2	D1-D2- D3-D4

Evaluation Ilos matrix:

TOOLS	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	practical	general	
Written examination	A1.A2.A3	B1.B2.B3		-	25
Oral examination	A1.A2.A3	B1.B2.B3		-	10
Practical examination		B3	C1.C2.C3	D1.D2.D3.D4	15

Course coordinators:

Prof. Dr. Mahmoud A. Elseify

Head of the department

Prof. Dr. Reda Khalafalla

KAFRELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENTS 1- HYGIENE AND PREVENTIVE MEDICINE 2- NUTRITION AND CLINICAL NUTRITION

Course specification (2021 / 2022)

1 - Basic Information:

Course title: **Poultry Nutrition and Hygiene.**

Program on which the course is given: **Diploma degree in veterinary medical science
(Diploma of poultry diseases)**

Total teaching hours: 192 hrs

Lectures: **96 hrs**

Practical: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

To provide students with knowledge on appropriate hygienic measures in poultry farms and to identify hygienic problems of poultry farms and how to solve these problems according to hygienic principles. Also, provide the students with proper nutrition of poultry and feedstuff commonly used in poultry diets.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1 Describe and illustrate different types of poultry housing.

A2 locate the role of the environment around the poultry (air, water and soil) in transmission of diseases and maintenance of infection.

A3 Identify appropriate hygienic measure and management of poultry wastes and control of hostile environmental conditions.

A4 Identify the functions, metabolism and deficiency of nutrients

A5 List the appropriate nutrients requirements of poultry

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1 Judge the principles and concepts of hygiene in solving hygienic problems in poultry farms housing systems.

B2 Consider the use of modern techniques in collecting and analyzing data about occurrence, distribution and possible risk factors of poultry diseases

- B3 Recommend measures to prevent control and eradicate infectious diseases in poultry farms
 B4 Modify nutrient requirement of poultry during heat stress.
 B5 Plan to prevent deficiency and metabolic diseases

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1 Solving the different housing disorder or environment stress in poultry house
 C2 analyze different environmental samples (water, air, soil, bedding) from poultry farms.
 C3 Classify and solving hygienic problems in poultry farms.
 C4 Formulate balanced diets for poultry.
 C5 Prevent nutritional and metabolic diseases of poultry.
 C6 Manage diets during heat stress

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1 work effectively as a member of a team in the delivery of services to community.
 D2 Support effective communication with the public, colleagues and appropriate authorities.
 D3 Apply communicating skills, have access to the internet and retrieve information
 D4 Write reports in a form that is satisfactory and understandable.
 D5 point out primary research techniques and critical evaluation.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Poultry housing and ventilation systems	12	8	4
The environmental requirements for poultry. - Water hygiene. - Air hygiene	72	24	48
Biosecurity inside poultry farms	36	36	-
Nutrients requirement for poultry	24	24	-
Feedstuffs used in poultry diets	24	-	24
Nutritional deficiency diseases of poultry	24	12	12
Metabolic disease of poultry	12	6	6
Nutrition during heat stress	12	6	6

Total	192	96	96
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5- TEACHING & LEARNING METHODS:

*Lectures

(using data show, white board, overhead projector and brain storming)

*Practical and small group sessions:

1: Practical training.

(Practical demonstrations, practice of skills, and discussions)

* Self learning

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- Preparation of posters
- Preparation of scientific reports.

* Audiovisual

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	After the end of 48 weeks	After the end of 48 weeks	After the end of 48 weeks
<u>7.c grads</u>	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Text book in faculty library.

8-2: Recmonded books:

8-2.a Animal Health. Sainsbury. D (2003)

8-2.b Herd Health. Food Animal Production Medicine. Radostits et al. (1994)

8-2.c Managing Livestock Wastes to Preserve Environment (2000): Miner, J.R. et al. Iowa, Iowa State University Press.

8-2.d Farm animals and the environment. Phillips and Piggins (1992)

8-2.e Livestock health and housing. Sainsbury. D (1988)

8-2.f Environmental Contaminants: Assessment and Control (2004): Vallero, D.A. Amsterdam, Elsevier

8-3: SUGGESTED books:

8-3.a Livestock Housing: Modern Management to Ensure Optimal Health and Welfare of farm animals (2013); Andres Aland, Thomas Banhazi, Wageningen Academic Publisher, Netherland.

8-3.b Veterinary Epidemiology (2013); Michael Thrusfield; Butterworth-Heinemann

8-3.c. Nutrient requirement of poultry 1994

8.4: web sites and jouranlsand so on

- WWW.PubMed.com
- <https://www.gov.uk/guidance/controlling-disease-in-farm-animals>www.Vet.net.com
- <https://www.gov.uk/guidance/keeping-livestock-healthy-disease-controls-and-prevention>
- <http://www.journals.elsevier.com/international-journal-of-veterinary-science-and-medicine/>
- <http://www.springer.com/environment/journal/11356>
- Animal feed science journal
- Poultry science journal

Corse content ILOs Matrix

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Poultry housing and ventilation systems	A1	B1	C1-C3	D1-D2-D3D4-D5
The environmental requirements for poultry. - Water hygiene. - Air hygiene	A2	B2	C2	D1-D2-D3-D4-D5
Biosecurity inside poultry farms	A3	B3	-	D1-D2-D3-D4-D5
Nutrients requirement for poultry	A4-A5	B4-B5		D1-D2-D3-D4-D5
Feedstuffs used in poultry diets		B4-B5	C4- C5	D1-D2-D3-D4-D5
Nutritional deficiency diseases of poultry	A4- A5	B4-B5	C4- C5	D1-D2-D3-D4-D5
Metabolic disease of poultry	A4- A5	B4-B5	C4- C5	D1-D2-D3-D4-D5
Nutrition during heat stress	A4- A5		C4-C6	D1-D2-D3-D4-D5

Assessment ILOs Matrix:

Methods	I.L.O.S Evaluation			Marks allocated	
	Knowledge	Intellectual	Practical		
Written examination	A1.A2.A3.A4.A5	.B4.B5		D1	50
Oral examination	A1.A2.A3. A4.A5	B4.B5		D2,D3	25
Practical examination		B1.B2.B3.	C1.C2.C3.C4.C5.C6	D4,D5	25

Course Coordinator of Poultry Hygiene:	Course Coordinator of Poultry Nutrition:
Head of Hygiene and Preventive Medicine Prof. Dr. Tarek Balabel	Head of Nutrition and Clinical Nutrition Prof. Dr. Abdelnasser Bakr
Dr. Fatma Ali Abouelenien	Prof. Dr. Elsayed Hegazi
Dr. NaghamElsaidy	Dr. Eldsokey nasef

Program matrix

Course title	No of hours/week		Program ILOs covered by No																							
	Lecture	Practical Lab	A7) (K and U							b (4)- IS				c (5) – ProS and PraS					d (7) – GS and TS							
Poultry and rabbit diseases	2	2	x	x	x			x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x
Poultry and rabbit parasitology and microbiology	1	1		x									x		x			x		x			x	x	x	x
physiology of poultry	1	1		x			x						x					x	x		x	x	x	x	x	x
Poultry nutrition and hygiene	2	2				x		x			x		x					x		x	x	x	x	x	x	x
Poultry pathology	2	2	x	x	x			x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	2
Total	8	8																								

Course specification (2021 / 2022)

1 - Basic Information:

Code number:

Course title: **Poultry Pathology**

Academic Year: Diploma program (Poultry diseases)

Total teaching hours: 192hrs

Lectures: 96hrs

Practical: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

To provide student with basic knowledge and skills concerning with different diseases that affect different systems of different birds species.

Enable students to differentiate between the different causative agents based on macro and microscopic findings.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1- Describe the pathological alterations developed in avian diseases.

A2- Recognize the suspected diseases based on gross and microscopic findings.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- Correlates gross and microscopic findings with clinical picture.

B2- Create difference between the pathological changes induced in systems of different species of birds by bacterial, viral and parasitic diseases.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1-Examine stained tissue slides obtained from affected birds using light and electron microscopes.

C2-Compare between the pathological pictures of different poultry diseases.

C3-Detect the difference between pathological alterations induced in the poultry diseases.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Coach and work in groups.

D2-Classify different duties

D3- Utilize computer and internet skills.

D4-Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Digestive system Diseases	36	18	18
Respiratory system Diseases	34	17	17
Urogenital system Diseases	30	15	15
Immune system Diseases	28	14	14
Endocrine system, nervous system, skin Diseases	32	16	16
Viral, bacterial and parasitic poultry diseases	32	16	16
Total	192	96	96

5- TEACHING & LEARNING METHODS:

***Lectures:**

using data show, white board and over head projector.

***Practical and small group sessions:**

Practical training: Practical demonstrations, practice of skills, and discussions.

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

Histopathological Drawings.

Library researches.

Internet researches.

Discussion in the researches.

Preparation of scientific reports.

*** Audiovisual**

Television circle in the practical laboratory.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-

*Activation of office hours.

*Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	One examination at the end of the academic Year	One examination at the end of the academic Year	One examination at the end of the academic Year
<u>7.c grads</u>	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- *Practical Department Notes: available for students to purchase from the department.*
- Microscopes, slides, projector slides, Data show.

8-2: Recmended books:

- Walter and Israel(1996): general pathology ,6th.
- Jones, hunt and king (1997): veterinary pathology.
- Jobb, K.V.F. Kennedy,B.C. and PALMER, N,(1985) : Pathology of demostic animals. academic press.
- Dijk, J E van; Gruys, E (Erik); Mouwen, J M V M. 2007 Color atlas of veterinary pathology : general morphological reactions of organs and tissues, 2nd ed.Edinburgh ; New York : Saunders Elsevier, 2007.
- David E. Swayne, John R. Glisson, Larry R. McDougald, Lisa K. Nolan, David L. Suarez, Venugopal L. Nair(2013): Diseases of Poultry
- Quinn, P J; Markey, B K (Bryan K); Leonard, F C; FitzPatrick, E S; Fanning, S; Hartigan, P J. (2011) Veterinary microbiology and microbial disease, Second Edition.Chichester, West Sussex, UK : Wiley-Blackwell

8-3: SUGGESTED books:

- *Ivan Dinev: Diseases Of Poultry A Colour Atlas 2nd Edition*

8.4: web sites and jouranlsand so on

- *WWW.PubMed.com*
- *www.Vet.net.com*
- *Egyptian journal of comparative pathology*
- *Americanjournal of pathology.*
- *Journal of veterinary science*

Intended learning out comes of each topic

TOPIC	K.U (a)	LS (b)	P.P.S (c)	G.T.S (d)
Digestive system Diseases	A1 A2-	B1-B2	C1-C2- C3-	D1-D2-D4
Respiratory system Diseases	A1- A2-	B1,B2	C1-C2-C3	D1-D2-D3- D4
Urogenital system Diseases	A1- A2-	B1,B2	C1-C2-C3	D1-D2-D4
Immune system Diseases	A1- A2-	B1,B2	C1-C2-C3	D1-D2-D4
Endocrine system, nervous system, skin Diseases	A1- A2-	B1,B2	C1-C2-C3	D1-D2-D4
Viral, bacterial and parasitic poultry diseases	A1- A2-	B1,B2	C1-C2-C3	D1-D2-D4

Evaluation Intended learning out comes

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectua I	Practical	General	
Written examination	A1.A2.	B1.B2		D3	50
Oral examination	A1.A2.	B1.B2		D4	25
Practical examination		B2	C1.C2.C3.	D1,D2	25

Course Coordinator:

Dr. Nagwan El-Habashi

Head of Department:

Prof. Dr. Ahmed Elsawak

Course specification (2020 / 2021)

1 - Basic Information:

Course title: Poultry Physiology

Academic Year: Diploma of poultry diseases.

Total teaching hours: 96 hrs

Lectures: 48 hrs

Practical/small group sessions: 48 hrs

2 - OVERALL AIMS OF THE COURSE:

- a- To study the different types of birds land, flying and aquatic birds.
- b- To provide students with deep understanding of the structure of endocrine gland and different types of hormones secreted from bird glands.
- c- The student will understand the role lungs and air sacs in gas exchange in birds.
- d- To know the different hormones and enzymes secreted from digestive tract and their functions and control.
- e- Deep knowledge about reproductive hormones and mode of action of each of them.
- f- To understand how egg formation is hormonally regulated in different birds.
- g- The student should understand the stress hormones and how they affect autonomic nervous system, immunity and other hormones

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- a1- Explain the molecular mechanism of the function of each endocrine gland in the birds.
- a2- Identify the molecular mechanism of hormone action and the different hormonal interaction in the body.

- a3- recognize the mechanism of respiration, Excretion and their impacts on body functions
 a4- locate the basic knowledge about the male and female reproductive systems physiology, regulation and the endocrine factors that participate in normal sexual drive and fertility and the factors that may cause dysfunctions, infertility
 a5- describe the mechanism of digestion, enzymes acting on it.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- b1-Evaluation of the endocrine gland function through measurement of different hormone level in the blood by ELIZA.
 b2- Assessment of the respiratory efficiency through measuring blood gases by blood gas analyser
 b3-Examination of the reproductive performance of male animal through evaluation of the semen sample.
 b4-Analyze of the reproductive performance of female animal through measurement of different reproductive hormones

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1- Interpret any endocrine and reproductive situations concerning the endocrine or the reproductive systems in the animal body.
 C2- Measure and analyze different hormones in animal body and interpret the disorders.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able:

- D1-Coach and work in group.
 D2-Classify different duties.
 D3-Utilize computer and internet skills.
 D4-Develop the ethical behaviours between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours (Semester)	Hours for lecture	Hours for practical
Blood and circulation	24	8	16
Reproduction	24	10	14
Respiration	10	6	4
Digestion	10	8	2
thermoregulation	2	2	-
Excretion	4	4	-
Endocrine glands	22	10	12
Total	96	48	48

5- TEACHING & LEARNING METHODS:

* **Advanced lectures:** PowerPoint presentations including videos, and whiteboard Discussion and brain storming

***Practical and small group sessions:**

1: Practical training. (Practical demonstrations,

* **Self learning** practice of skills, discussions Microscopes and other facilities as Data show) Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- Preparation of posters
- Preparation of scientific reports.

* **Distance Teaching and Learning:** Using the Microsoft Teams platform, when necessary, such as during COVID-19 pandemics or when onsite (face-to-face) education is halted due to weather emergencies or other reasons. Distance teaching may be offered synchronous or non-synchronous

* **Audiovisual** :Video show.

Teaching and Learning Methods	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Advanced lectures*	a1 to a4	b1 to b4		d1, d4
Practical sessions		b1 to b4		D1-d4
Self-Learning activities				d2, d3, d4
Distance Teaching and Learning	a1 to a4	b1 to b4		d1 , d3

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination
7.b time	At the end of the academic year	At the end of the academic year
7.c grads	25	25

Evaluation Intended learning out comes

Methods	7. Student Assessment			
	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Written examination	A1.A2.A3.A4,A5	B1,B2,B3,B4	-----	D1-D4
Oral examination	A1.A2.A3.A4,A5	B1.B2,B3,B4	-----	D1-D4
Practical	A2.A3.A4,A5	B1,B2,B3,B4	C1.C2	D1-D4

KU, knowledge and understanding; IS, intellectual skills; PPS, practical and professional skills; GTS, general and transferable skills. KU, knowledge and understanding; IS, intellectual skills; PPS, practical and professional skills; GTS, general and transferable skills.

8. LEARNING AND REFERENCE MATERIALS:

8-1: Essential Books

- Animal Physiology. Richard W Hill , Gordon A Wyse , Margaret Anderson (4th Ed) ISBN: 9781605357379 Edition: 4 Paperback Oct 2017
- Principles of Animal Physiology (2016) 3rd edition. Christopher D. Moyes, Patricia M. Schulte
- Principles of Animal Physiology (2018) 3rd edition, Christopher D. Moyes, Patricia M. Schulte
- Eckert Animal Physiology: Mechanisms and Adaptations (1997) 4th Ed, David Randall , Warren Burggren
- Functional Anatomy and Physiology of Domestic Animals, (2017) 5th Edition, William O. Reece, Eric W. Rowe
- Cunningham's Textbook of Veterinary Physiology, 6th Edition - January 3, 2019
- Dukes' Physiology of Domestic Animals, (2015) 13th Edition, William O. Reece (Editor), , Jesse P. Goff , Etsuro E. Uemura
- COMPARATIVE ANIMAL PHYSIOLOGY (2020) 1st Edition, by Philip C. Withers Anatomy and Physiology of Farm Animals, 8th Edition, Anna Dee Fails, Christianne Magee
- Essentials of Animal Physiology, (2007) S. C. Rastogi
- Equine Exercise Physiology (2002), David Marlin, Kathryn J. Nankervis
- Guyton and Hall Textbook of Medical Physiology (Guyton Physiology) (2022) 14th Edition, by John E. Hall PhD , Michael E. Hall MD MSc.
- Sturkie's Avian Physiology (2015) • Sixth Edition • 2015

8-2: Recommended books:

- Ruchebusch, Y., Phaneuf, I. and Dunlop, R (1991) Physiology of small and large Animals. B.C. Decker , Inc, Philadelphia, Hamilton.
- Swenson M.J, Reece, W.O. and Comstock (1993) Duke's Physiology of Domestic Animals. 11th edition, publishing Associates a division of Cornell University press. Ithaca and London.
- Gummingham, J. (1992) Text book of Veterinary Physiology. W.B. Saunders Company, Toronto, Montreal, Tokyo.
- Guyton, A. (1991) Text book of Medical physiology. 8th, W.B. Saunders Company.
- - Ganong, W.F. (1989) Review of Medical Physiology. 9th (Middle East edition) Appleton and Lang.
- 8.2.f- Periodicals, Web Sites, ... etc.

8-3: Egyptian Knowledge Bank:

- Animal Physiology, Beaver, BV and Höglund, DL. 2016. Academic Press, Elsevier Inc.
- Animal Physiology: An Environmental Perspective, by Patrick J. Butler, J. Anne Brown, et al. | Sep 23, 2020. Academic Press, Elsevier Inc.
- Principles of Animal Physiology , by Christopher Moyes and Patricia Schulte | Jan 15, 2015. Academic Press, Elsevier Inc.
- Animal Physiology: From Genes to Organisms, by Lauralee Sherwood , Hillar Klandorf, et al. | Jan 1, 2012. Academic Press, Elsevier Inc
- Anatomy and Physiology of Farm Animals, by Anna Dee Fails and Christianne Magee | Jul 11, 2018. Academic Press, Elsevier Inc.
- Veterinary Anatomy Coloring Book: Animal Anatomy and Veterinary Physiology Coloring Book Vet Tech, Summer Sparks | Sep 22, 2020. Academic Press, Elsevier Inc
- Functional Anatomy and Physiology of Domestic Animals. by William O. Reece and Eric W. Rowe | Aug 14, 2017, Academic Press, Elsevier Inc

- Introduction to Animal and Veterinary Anatomy and Physiology, by Victoria Aspinall and Melanie Cappello | Dec 12, 2019. Academic Press, Elsevier Inc
- Eckert Animal Physiology: Mechanisms and Adaptations, by David Randall | Nov 1, 2001, Academic Press, Elsevier Inc
- Animal Physiology: Adaptation and Environment, by Knut Schmidt-Nielsen | Apr 10, 1997. Academic Press, Elsevier Inc.
- Das, DN. Paul, D. and Mondal, S. 2022. Emerging Issues in Climate Smart Livestock Production. Biological Tools and Techniques. Academic Press, Elsevier Inc.
- Avian (Poultry) Production: 2nd Revised and Enlarged Edition, by D. Sapkota, D. Narahari, J.D. Mahanta, 2017.
- Poultry Health: A Guide for Professionals, by Paul Barrow, Venugopal Nair, Susan Baigent, Robert Atterbury, Michael Clark, 2021.
- Poultry Science, 5th Edition, by Colin G. Scanes, Karen D. Christensen, 2019.

8.4. Scientific Journals

- Animal physiology and biochemistry
- Cells
- Life science
- Stress
- Biomedicine
- Animal reproduction science
- Aquaculture
- Veterinary sciences
- Scientific report
- .frontier in veterinary science
- Journal of Animal Science.
- Egyptian Poultry Science
- Poultry Science Association
- American journal of poultry science
- British Poultry Science
- International journal of Poultry Science.
- Journal of Applied Poultry Research

8.5. Scientific websites

- The Egyptian Knowledge Bank: <https://www.ekb.eg/web/guest/home>
- <https://animalphys4e.sinauer.com/>
- <https://teachmephysiology.com/>
- <https://www.nature.com/subjects/animal-physiology>
- <https://sites.msudenver.edu/haysc/biology-courses/animal-physiology-bio-3360/>
- <https://www.acsedu.com/Courses/animal-biology-animal-husbandry-i-599.aspx>
- <https://animalphys4e.sinauer.com/quiz/>
- <https://askabiologist.asu.edu/explore/animal-physiology>
- <https://www.sinauer.com/media/wysiwyg/tocs/AnimalPhysiology3.pdf>
- <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/animal-physiology>
- <https://library.ivytech.edu/c.php?g=869309&p=6239318>
- DeLaval Dairy Supply. <http://www.delaval.com/en/-/Dairy-knowledge-and-advice/>
- Lactation Biology: <http://classes.aces.uiuc.edu/ansci308/index.html>
- Heat Detection and Timing of Insemination for Cattle. Penn State, College of Agricultural Sciences, Cooperative Extension. <https://extension.psu.edu/heat-detection-and-timing-of-insemination-for-cattle> accessed 08/09/2017.
- National Dairy Database: <http://www.inform.umd.edu:8080/edres/topic/agr/ndd>
- The Babcock Institute: <http://babcock.cals.wisc.edu>
- WWW Virtual Library for Dairy Production* (Oklahoma). <http://www.ansi.okstate.edu/library/dairy/>
- US Dairy Export Council: <http://www.usdec.org/about/whoweare.htm>
- The International Dairy Federation (IDF): <http://www.fil-idf.org/>

- Managing of dairy heifers: <http://www3.das.psu.edu/dcn/calfmgt/385/index.html>
- Management Practices Associated with High-Producing U.S. Dairy Herds (USDA): http://www.aphis.usda.gov/vs/ceah/cahm/Dairy_Cattle/drymgmt.htm
- A beginners guide to raising sheep <http://www.sheep101.info/201/feedwaterequip.html>
- <http://www.thepoultrysite.com/>

Course Coordinator:
Dr. Mustafa Shukry Atta

Head of Department:
Prof.dr. Ahmed abd Elaziz Abd Erhman

Course Matrix for achievement of Intended Learning Outcomes

Topics	Hours	Knowledge & Understanding(a)					Intellectual Skills(b)				Practical (c)			General & Transferable Skills(d)				
		1	2	3	4	5	1	2	3	4	1	2	3	1	2	3	4	
Blood and circulation	24					✓			-	-	✓	✓	✓	✓	✓	✓	✓	✓
Reproduction	24				✓		✓	✓	-	-	✓	✓	✓				✓	✓
Respiration	10			✓	✓		✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Digestion	10		✓				✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓
thermoregulation	2			✓		✓	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Excretion	4			✓							✓	✓	✓					
Endocrine glands	22	✓			✓	✓					✓	✓	✓					



Kafrelsheikh University
Faculty of Veterinary Medicine



Kafrelsheikh University

Faculty of Veterinary Medicine

Department of Fish Diseases and Management

Program Specification for Master Degree

(2021 - 2022)

Program Title:

Master of The Veterinary Science

(Fish diseases and management)



A- Administrative information:

- 1- **Awarding Body:** Kafrelsheikh University
- 2- **Teaching Body:** Faculty of Veterinary Medicine
- 3- **Department responsible:** FISH DISEASES AND MANAGMENT
- 4- **Program Title:** FISH DISEASES
- 5- **Final award:** Diploma Degree
- 6- **Registration period:** one year
- 7- **Program Co- coordinator:** Prof. Dr.: Eman Mostafa

B- Professional Information

1- Programme Aims

- The program aims to qualify students and graduates to understand fish Diseases & their management for improving the economic and productive efficiency of fish farms.

By the completion of his study, the students and graduate will be capable:

- To understand how to use the fish informations and its applications in fish diseases and farm management.
- To identify technological problems of fish industry and how to solve them.
- To estimate the efficiency of fish farms and their projects.
- To design and execute feasibility studies of different fish projects.
- To assess the economic benefits of diseases control by using any herd health programs.

B- Professional Information

Programme Aims

The program aims to qualify students and graduates to understand fish Diseases & their management for improving the economic and productive efficiency of fish farms.

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To identify technological problems of fish industry and how to solve them.

To estimate the efficiency of fish farms and their projects.

To design and execute feasibility studies of different fish projects.

To assess the economic benefits of diseases control by using any herd health programs.

2- Academic standards:

Academic reference standards (ARS) adopted by the faculty committee No 1(14/9/2014)

3-Graduate attributes:

Upon successful completion of the program, the graduate has the ability for:

- 1) Application of the gained specific knowledge in fish diseases
- 2) Understanding the different diseases and health problems affecting the fish and suggest modern solutions and vision to it and be aware with the ongoing problems and modern concepts in the area of diagnosis, treatment and control of fish diseases.
- 3) Application of analytical methods in the area of diagnosis, treatment and control of fish diseases.
- 4) Effective communication and lead work team during the diagnosis, treatment or control of fish diseases.
- 5) Taking Decision by treatment or destruction of the fish diseases under the available situation and knowledge.
- 6) Effective Use of the available resources and data for diagnosis and prevention of different diseases problems.
- 7) Awareness with his role in society development and community preservation.
- 8) Reflecting the commitment to act with integrity, credibility, and the rules of profession.

4-Intended Learning Outcomes (ILOs)

a- Knowledge and Understanding:

By the end of the program, graduates of diploma degree of fish diseases Program should be able to:



- a.1. Define basic principles and practice in the field of fish diseases.
- a.2. Recognize the ethical and legal principles for professional practice in the field of fish nutrition and infectious diseases.
- a.3. Apply efficiently the standards of quality standards in the diagnosis, treatment and prevention of fish diseases
- a.4. Identify the influence of diagnosis, treatment and prevention of fish diseases on surrounding environment and human and animal health
- a.5. Describe the basics of fish microbiology, parasitology , pathology and physiology

b- Intellectual Skills

- b.1. Solve diagnostic problems of fish diseases based of on the clinical and laboratory findings.
- b.2. Analyze scientific papers concerning fish diseases and management
- b.3. Assess risk for factors affecting the fish diseases.
- b.4. Select the appropriate programs for evaluation and assessing the fish benefits of diseases control.

c- Professional and Practical Skills

By the end of this program the graduate should be able to:

- c.1. Master the basic practical of diagnosis, treatment and control of fish diseases.
- c.2. Write professional reports about different cases and problems of fish diseases

General and transferable skill

By the end of this program, the graduate should be able to:

- d.1. Communicate efficiently with teaching staff, colleagues and the community
- d.2. Utilize information technology in scientific research and publications.
- d.3. Update information and knowledge and exchange it with staff and colleagues.
- d.4. Identify and use different sources of information and knowledge in clinical pathology and other related topics.
- d.5. Respect the importance of team work and do good control of time.
- d.6. Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team.
- d.7. Use the tools important for self and continuous learning.

5-Programme structure:



A: duration: one year

B: program courses

Course Title	No. of hours /week		
	Lecture	Lab.	Total
Diseases of fish	1	2	3
Pathology of fish	1	2	3
Fish Nutrition and management	2	2	4
Microbiology of fish	1	1	2
Parasitology of fish	1	1	2
Physiology of fish	1	1	2
Total	7	9	16

6-Teaching and Learning Methods:

The program features a variety of teaching approaches for different intended learning objectives, including lectures, practical and lab sessions, field visits and seminars.

7- Student assessment:

The program courses depends on different assessment ways:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
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2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills

Assessment of program intended learning outcomes

Tool or method	ILOs			
	K & U (a)	I.S (b)	P.P (c)	G.T (d)
Written	1-5	1,2,4		1-6
Oral	1-5	1,3,4		1-6
Practical		1,2,3	1-2	1-6

8-Marking scale as follow:-

Grade		Percentage
Excellent		> 90
Very good		>80
Good		>70
Pass		>60
Fail	weak	45 to less than 60
	very weak	Less than 45



9-Evaluation of program outcomes

Code	Evaluator	Tools	Sample
1	Postgraduate students	Questioners	20%
2	Stakeholder	Questioners & Open discussion	10
3	Alumni	Questioners	15
4	External examiners	Report	1
5	External evaluators	Report	1

10. Program Admission Requirements:

Applicant must normally satisfy the Faculty of Veterinary Medicine University of Kafrelsheikh general entrance and requirement.

- The applicant must have regular attendance in his courses according to the schedule of the faculty.

11. Regulations for progression of program

- a) Registration period for the Diploma in veterinary medicine sciences is one year after the approval date by the Faculty council, and it should not exceed a period of two years.
- b) The student should conduct the courses proposed by both department council and approved by postgraduate and research committee and faculty council (article 32) in regulation law list and the student will be entitled to apply for the exam. only after meeting attendance rate for each course.
- c) The student should pass written, practical and oral exams successfully in all courses, and the grade will be estimated according to in regulation law list.



- d) The Faculty council has the right to deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- e) Registration will be during September of each year.
- f) Failure in or depriving from entering one or more course did not requires reexamination of successful passed courses.

12-Examination Regulations

- a- Time of written exam, 3 hours for each course that has 3 hours or more for lecture / practical /week. **If has less than 3 hours/week, the time of exam, is 2 hours only.**
- b-The final degree of each course which has 3 hours (lecture and practical) per week is **100 and less than 3 hours is 50 degrees and divided into 50% for written exam, and 50% for practical and oral exam.**

c- Program Co-ordinator:

Prof. Dr. Eman Mostafa

Head of Department

Prof. dr. nadia bassiouni



Matching program ILOs with ARS - Matrix

Prog. ILOs	ARS																		
	K&U (a)				I.S. (b)					P.P. (c)		G.T. (d)							
	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7	
K&U	1	2	3	4															
I.S.					1	2	3	4	5										
P.P.										1	2								
G.T.												1	2	3	4	5	6	7	



Program Specification Matrix

Courses	Total Contact hours/ course	No. of hours / week			K.U (a)					I.S (b)					P.P (c)		G.T (d)						
		Lect.	Lab.	Total	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7	
Diseases of fish	144	2	1	3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Pathology of fish	144	2	1	3	x		x	x	x	x	x	x			x	x	x	x	x	x	x	x	
Nutrition of fish	192	2	2	4	x		x		x	x	x			x	x	x	x	x	x	x	x		
Microbiology of fish	96	1	1	2	x		x		x	x			x	x	x	x	x	x	x	x	x		
Parasitology of fish	96	1	1	2			x		x	x	x	x			x	x	x	x	x	x	x	x	
Physiology of fish	96	1	1	2			x		x	x	x			x	x	x	x	x	x	x	x	x	
Total	768	9	7	16																			

ARS for Diploma in Fish Diseases

1) Graduate attributes

At the end of the program, graduate must be able to:

- 1) Application of the gained specific knowledge in fish diseases
- 2) Understanding the different diseases and health problems affecting the fish and suggest modern solutions and vision to it and be aware with the ongoing problems and modern concepts in the area of diagnosis, treatment and control of fish diseases.
- 3) Application of analytical methods in the area of diagnosis, treatment and control of fish diseases.
- 4) Effective communication and lead work team during the diagnosis, treatment or control of fish diseases.
- 5) Taking Decision by treatment or destruction of the fish diseases under the available situation and knowledge.
- 6) Effective Use of the available resources and data for diagnosis and prevention of different diseases problems.
- 7) Awareness with his role in society development and community preservation.
- 8) Reflecting the commitment to act with integrity, credibility, and the rules of profession.
- 9) Realize the importance of self and life-long learning

A) Knowledge and understanding

Adopted ARS		NARS (Diploma)	
	<i>By the end of this program the graduate should understand and accommodate the following:</i>		<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Basics principles and practice of fish pathology, fish nutrition and management, fish diseases, microbiology, parasitology and physiology		Basics, theories and specific knowledge in educational field and sciences related to professional practice
2)	Principles of laboratory safety and regulations (laboratory hazards and protective measures).		Ethical and legal principles related to professional practice
3)	Application of quality standards in the fish diseases Laboratory		Basics and principles of quality assurance in professional practice in the field of specialization
4)	Basis of diagnostic laboratory hazards on surrounding environment and methods to maintain clean environment		Impact of professional practice on environment and work to preserve and maintain the environment

B) Intellectual skills

Adopted ARS	NARS (Diploma)
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	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Identification and analysis of fish diseases problems in the field and arranging them according to significance	Determination and analysis of professional problems in the field of specialization and arranging them according to priorities
2)	Solving fish diseases problems based on the laboratory data and evidence based diagnosis	Solving professional problems in specialization field
3)	Evaluating different obtained data with normal and reference values and formulating interpretation after excluding non-specific interpretation	Analytical reading of researches and scientific topics in the field of specialization
4)	Designing a Risk Assessment Form and performing a Risk Assessment for an item within fish diseases laboratory	Risk assessment in professional practice.
5)	Using appropriate intellectual strategy and evidence based decisions to deal with fish diseases problems and make decisions	Professional decision making using available information

C) Professional and practical skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Performing the basic practical skills in fish diseases, microbiology, parasitology and physiology	Applying professional skills in the field of specialization
2)	Writing professional laboratory reports with interpretation of data according to the normal reference values	Writing professional reports

D) General and transferable skill

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Effective communication with teaching staff,	Effective communication

	colleagues and the community	
2)	Utilizing information technology in scientific research and publications.	Utilizing information technology to serve development of professional practice.
3)	Updating information and knowledge and exchange it with staff and colleagues.	Self-assessment and determination of personal educational needs.
4)	Identifying and using different sources of information and knowledge in poultry and rabbits diseases and other related topics	Using different resources to obtain knowledge and information.
5)	Respecting the importance of team work and do good control of time.	Working in team and efficient time management.
6)	Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team	Leading a team in familiar professional contexts.
7)	Using the tools important for self and continuous learning	Self and continuous learning

أولاً: برامج دبلومه الدراسات العليا

١- مواصفات الخريج

خريج برنامج دبلومه الدراسات العليا في أي تخصص يجب أن يكون قادراً على:

١. تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
٢. تحديد المشكلات المهنية و اقتراح حلولاً لها
٣. إتقان المهارات المهنية واستخدام الوسائل التكنولوجية المناسبة في ممارسته المهنية
٤. التواصل و قيادة فرق العمل من خلال العمل المهني المنظمي
٥. اتخاذ القرار في ضوء المعلومات المتاحة
٦. توظيف الموارد المتاحة بكفاءة
٧. الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة
٨. التصرف بما يعكس الالتزام بالنزاهة و المصداقية و قواعد المهنة و تقبل المسائلة و المحاسبة
٩. إدراك ضرورة تنمية ذاته و الانخراط في التعلم المستمر

٢- المعايير القياسية العامة

١ المعرفة و الفهم. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على فهم و

استيعاب كل من:

- أ- النظريات و الأساسيات و المعارف المتخصصة في مجال التعلم وكذا العلوم ذات العلاقة بممارسته المهنية
- ب- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص
- ج- مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص
- د- تأثير لممارسة المهنية على البيئة و العمل على الحفاظ على البيئة و صيانتها

٨

٢ المهارات الذهنية. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على:

- أ- تحديد و تحليل المشاكل في مجال التخصص و ترتيبها وفقاً لأولوياتها

- ب - حل المشاكل المتخصصة في مجال مهنته
ج - القراءة التحليلية للأبحاث و المواضيع ذات العلاقة بالتخصص
د - تقييم المخاطر في الممارسات المهنية
هـ - اتخاذ القرارات المهنية في ضوء المعلومات المتاحة
- ٣ المهارات المهنية. ٢**
بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
أ - تطبيق المهارات المهنية في مجال التخصص
ب - كتابة التقارير المهنية
- ٤ المهارات العامة و المنقولة. ٢**
بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
أ - التواصل الفعال بأنواعه المختلفة
ب - استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية
ج - التقييم الذاتي و تحديد احتياجاته التعليمية الشخصية
د - استخدام المصادر المختلفة للحصول على المعلومات و المعارف
هـ - العمل في فريق و إدارة الوقت
و - قيادة فريق في سياقات مهنية مألوفة
ز - التعلم الذاتي و المستمر

KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF FISH DISEASES AND MANAGEMENT

**COURSE SPECIFICATIONS for Diploma degree
(2021 / 2022)**

1 - Basic Information:

Course title: Fish Diseases

Total teaching hours: 144 hrs . 3 hrs / week

Lectures: 48hr.

Practical: 96 hrs.

2 - OVERALL AIMS OF THE COURSE:

- Achieve the basic principals for distinguishing the normal and diseased fish, through their clinical examination.
- Provide the students with the basic hygienic measures adopted in aquacultures for food fish or aquaria for ornamentals.
- Provide the students with an appropriate background on the most common diseases affecting fishes with their remedies or prevention and control.
- Acquaint the students with an appropriate professional attitudes, communications and problem solving skills

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1-Describe the normal and pathological parameters of the different fish species, that may aid in diagnosis of the disease affections.

A2-Approach the appropriate management schedules and programs of fish aquacultures that may affect the growth, body weight gain and reproduction.

A3-Denote the appropriate knowledge about the water hydrochemistry of aquacultures for normal fish's life.

A4-Determine the nutritional disorders affecting the fish life stage (fry, fingerlings and adults) with their suitable management practices.

A5-Recognize the suitable health promotives as well as the preventive measures of fish diseases.

A6-Know the causes, pathogenesis, clinical signs, post-mortem findings, laboratory investigations, treatments for the most important fish diseases (bacterial, fungal, viral ad parasitic diseases).

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1-Interpret of the most important clinical signs and lesions of diseased fish.

B2-Adopt the proper management programs either for fish and /or the fish farm .

B3-Mindful the different clinical situations concerned with fish or water hydrochemistry of the fish farm.

B4-Report the laboratory investigation parameters performed for the fish or the water milieu.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1-Check the pathognomonic clinical signs in diseased fish .
 C2-Assess the normal developmental stages of fish life stages .
 C3-Apply appropriate clinical assessments for disease diagnosis.
 C4-Acquire the Talent of obtaining the proper case history of a fish farm.
 C5-Perform an adequate clinical investigations for diseased fish or the fish's environment in aquaculture.
 C6-Prescribe the proper remedies for an affected fish farm.
 C7- Construct the appropriate design for the fish farms.
 C8- Choose the perfect methods for fish transportation.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1- Coach and work in groups.
 D2-Classify different duties
 D3- Utilize computer and internet skills.
 D4-Develop the ethical behaviors between students and staff members as well as among the students themselves..

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
1- Bacterial Diseases of fish	18	6	12
2- Parasitic Disease of fish	18	6	12
3- Mycotic Disease of fish	18	6	12
4- Viral Disease of fish	12	4	8
5- Nutritional Diseases of fish	4	4	-
6- Principals of fish immunology	4	4	-
7- Role of stress in fish diseases	4	4	-
8-Prophylaxis and treatment	4	4	-
9- Water hydrochemistry associated diseases	12	4	8
10-Internal anatomy and external features of fish	10	-	

			10
11-General ichthyology and technical terms	10	-	10
12-Fish specimens dispatch	8	-	8
13-Haematological examination of fish blood	8	-	8
14- Fish farm construction	8	-	8
15- Commercial farm-food fish	6	6	-
Total	144	48	96

5- TEACHING & LEARNING METHODS:

*Lectures

(using data show, white board, overhead projector and brain storming)

*Practical and small group sessions:

Practical demonstrations, practice of skills, and discussions, farm visiting (practical training)

* Self learning

- (Computer researches and faculty library visits to prepare essays, reports, review articles, and presentations)
- Library researches.
- Internet researches.
- Discussion in the researches.

* Audiovisual

Data show & projectors (slide& overhead) in the practical Vet. laboratory

*Field visits

Fish farm visits

Fish hatcheries visits

6. METHODS FOR STUDENTS With limited capabilities:-

- Activation of office hours.
- Discussion with them during practical session

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	The Examinations were	The Examinations were	The Examinations were

	held at the end of the academic year.	held at the end of the academic year.	held at the end of the academic year.
7.c grads	50	20	30

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Overhead projections, slides and computer presentations used during teaching.
- Course notes lectures

8-2: Recommended books:

1. Bacterial fish pathogens (Austin & Austin)1999.
2. Fish Disease (Diagnosis and treatment) by Edward Noga, 2nd edition 2000.
3. Fish Medicine by Stoskopff (1993).
4. Practical Notes on Fish Diseases & Management. Students book (2016/2017).
5. Fish pathology, second edition (1989)

8.3: web sites and journalsand so on

- WWW.PubMed.com
- WWW.arabvet.com
- WWW.science direct.com
- www.FAO.com
- [J. Fish Pathology.](#)

Intended learning outcomes of each topic

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
1- Bacterial Diseases of fish	A1,A5,A6	B1	C1,C3,C4,C6	D1-D4
2- Parasitic Disease of fish	A1,A5,A6	B1	C1,C3, C4,C6	D1-D4
3- Mycotic Disease of fish	A1,A5,A6	B1	C1,C3, C4,C6	D1-D4
4- Viral Disease of fish	A1,A5,A6	B1	C1,C3, C4,C6	D1-D4
5- Nutritional Diseases of fish	A4	B1		D1-D4
6- Principles of fish immunology	A5	B1		D1-D4
7- Role of stress in fish diseases	A5	B1		D1-D4
8-Prophylaxis and treatment	A5	B2	-	D1-D4
9- Water hydrochemistry associated diseases	A3	B2-B3	C5	D1-D4

10-Internal anatomy and external features of fish	-	B1	C1,C2	D1-D4
11-Genaral ichthyology and technical terms		B1	C1,C2	D1-D4
12-Fish specimens dispatch		B1,B4	C8	D1-D4
13-Haematological examination of fish blood		B1,B4	C5	D1-D4
14- Fish farm construction		B1	C7	D1-D4
15- Commercial farm-food fish	A1	B1	-	D1-D4

Evaluation Intended learning out comes

TOOLS	I.L.O.S Evaluation			Marks allocated	
	Knowledge	intellectual	practical		General
Written examination	A1- A6	B1- B4			50
Oral examination	A1-A6	B1 -B4		D4	20
Practical examination		B3	C1- C8	D1-D4	30

Course Coordinator:

Prof. Dr. Eman Mostafa

Head of Department:

Prof. Dr. Nadia Basiony Mahfouz

Course specification
(2021 / 2022)

1 - Basic Information:

Course title: **Fish nutrition and Management**

Program on which the course is given : *Diploma of Fish diseases*

Total teaching hours: 192 hrs

Lectures: **96**

Practical: 96

2 - OVERALL AIMS OF THE COURSE:

To provide student with basic knowledge and skills concerning:

- To support achievement of basic knowledge of normal and abnormal fish nutrition and management to improve their productivity.
- To provide students with an appropriate background covering the common and important nutrition and management for each fish.
- To enable the students with an appropriate skills for solving the fish problems as a method for decreasing the stress and increasing the animal productivity.
- To provide the students with some knowledge which help them to avoid the fish's danger.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1 List normal and abnormal nutritional and managerial problems in different **fish** species.

A2 Determine the most suitable method of nutrition and management for each **fish** species at different ages.

A3 Recognise the causes and Describe appropriate nutritional and managerial control for the most important **fish** problems.

A4 Define the role of nutrition and management to avoid some **fish** diseases.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1 Interpret the most important symptoms and signs of healthy and sound **fish**.

B2 Decide the nutritional and managerial plans for each **fish**.

B3 Solve the common clinical problems associated with **fish** nutrition and management.

B4 Design the control method for any diseased **fish** admit in the clinic.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1 Collect vital signs for soundness in young and adult fish.

C2 Perform the right methods used for handling of fish during difficult examination.

C3 Employ a proper nutrition and management for any diseased fish.

C4 Apply an adequate clinical examination for diseased fish with care.

C5 Correct some fish nutritional deficiency.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1 Collect any data about fish in an organized and informative manner.
- D2 Communicate effectively with farm's owners using appropriate communication skills.
- D3 Present the important nutritional and managerial practices that increase fish welfare and its productivity.
- D4 Work in a teamwork and under pressure.

4 - COURSE CONTENTS:

TOPIC	Hours for lecture	Hours for practical
General introduction	32	-
fish management	32	-
fish nutrition	32	-
Handling of animals	-	24
Fish behavior	-	24
Fish nutritional deficiency	-	48
Total	96	96

5- TEACHING & LEARNING METHODS:

***Lectures**

(using data show, white board, overhead projector and brain storming)

***Practical and small group sessions:**

1: Practical training.

(Practical demonstrations, practice of skills, and discussions)

*** Farm visits**

visit to the fish production farm

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- Preparation of posters
- Preparation of scientific reports.

*** Audiovisual**

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written exam	Oral exam	Practical exam
7.b time	At the end of course 48 wk	At the end of course 48 wk	At the end of course 48 wk
7.c Marks	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: Recommended books:

8.1. a- Farm Animal Behavior. Frazer. D (2012)

8.1.b- Poultry Behavior and Welfare. Appleby et al. (2010)

8.2: web sites and journalsand so on

- WWW.PubMed.com
- International of veterinary information services (IVIS)
- www.Vet.net.com
- Journal of Hormone and Behavior
- Journal of applied Animal Ethology

Intended learning outcomes of each topic

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
General introduction	A1-A4	B1-B2-B4	-	D1-D2-D3-D4
fish management	A1-A2-A3- A4	B1-B2-B4	-	D1-D2-D3-D4
fish nutrition	A1-A2-A3- A4	B1- B3-B4	-	D1-D2-D3-D4
Handling of animals	-	B1- B3-B4	C1-C2-C3-C4-C5	D1-D2-D3-D4
Fish behavior	-	B1-B2-B3-B4	C1-C2-C3-C4-C5	D1-D2-D3-D4
Fish nutritional deficiency	-	B1-B2-B3-B4	C1-C2-C3-C4-C5	D1-D2-D3-D4

Intended learning outcomes Evaluation matrix

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	general	
Written examination	A1.A2.A3.A4	B1-B2-B3-B4	-	-	50
Oral examination	A1.A2.A3.A4	B1.B2.B3.B4	-	D1-D2-D3-D4	25
Practical examination	-	B1	C1.C2.C3. C4.C5	D4	25

Course Coordinator:
Prof. Dr. Tarek Balabel

Head of Department:
Prof. Dr. Tarek Balabel

KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF NUTRITION AND CLINICAL NUTRITION

Course specification

(2021 / 2022)

1 - Basic Information:

Course title: **Fish nutrition and welfare**

Program on which the course is given: **Diploma degree in veterinary medical science (Diploma of Fish diseases)**

Total teaching hours: 192 hrs

Lectures: 96 hrs

Practical: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

The course aimed to provide the postgraduate students with the proper nutritional management of fish. Also the course provides feedstuffs that are used in fish diets.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1. Define the nutrient required for fish
- A2. Recognize the metabolism of nutrients in fish
- A3. Describe the nutrient management in fish diets for fish welfare

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1. Compose the nutritive value of feeds used for fish welfare
- B2. Interpret the fitness of feeds for fish
- B3. Plan to prevent the nutritional problems of fish

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1. Show the proper feeds management for fish welfare
- C2. Prevent nutritional disease of fish
- C3. Balance nutrient required for fish

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1. Work in a team
- D2 . Use computers, software and CDs for educational purposes
- D3. Communicate with others
- D4. Conduct a search in digital library
- D5. Presentation skills: capacity to make oral presentations

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Energy requirement for fish	9	3	6
Carbohydrates nutrition for fish	20	5	10
Protein nutrition for fish	25	10	15
Lipids nutrition for fish	25	10	10
Nutritional problems of fish	25	10	10
Vitamins nutrition for fish	20	5	10

Minerals nutrition for fish	20	5	11
Feeds management for fish welfare	24	12	12
Nutrients management for fish welfare	24	12	12
Total	192	96	96

5- TEACHING & LEARNING METHODS:

*Lectures

(using data show, white board, overhead projector and brain storming)

*Practical and small group sessions:

Practical demonstrations, practice of skills, and discussions

* Self learning

- (Computer researches and faculty library visits to prepare essays, reports, review articles, and presentations)
- Library researches.
- Internet researches.
- Discussion in the researches.

* Audiovisual

Data show & projectors (slide& overhead) in the practical Vet. laboratory

6. METHODS FOR STUDENTS With limited capabilities:-

- Discussion with them during practical session.
- Theoretical and practical teaching suitable for people with limited capacity.
- Simplify and re-explain the information theoretically and practically wherever needed

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	At the end of 48 weeks	At the end of 48 weeks	At the end of 46 weeks
7.c grads	50	25	25

8- List of References :

8.1.Lectures notes

8.2.Practical notes

8.3.Essential Books (Text books)

- Nutrient requirements of fish and shrimp, 2011
- Vitamins in Animal Nutrition (Lee Russell McDowell, second edition 2000).
- Minerals in animal nutrition (Lee Russell McDowell, second edition 2003)

8.4.Periodicals, Web sites,..... etc

- Journal of American Veterinary Medical Association.
- Nutritional Abstract and Review
- Veterinary Bulletin.
- Archives of Animal Nutrition

Content-ILOs matrix :

Content	ILOs			
	Knowledge and understanding	Intellectual	Professional and practical	General and transferable
Energy requirement for fish	a1		C3	d1, d2, d3,d4, d5
Carbohydrates nutrition for fish	a1, a2	b1	C3	d1, d2, d3,d4, d5
Protein nutrition for fish	a1, a2	b2	C3	d1, d2, d3,d4, d5
Lipids nutrition for fish	a1, a2	b2	C1	d1, d2, d3,d4, d5
Nutritional problems of fish	a 3	b3	C2	d1, d2, d3,d4, d5
Vitamins nutrition for fish	a2, a3	b3	C3	d1, d2, d3,d4, d5
Minerals nutrition for fish	a2, a3	b3	C3	d1, d2,

					d3,d4, d5
	Feeds management for fish welfare	A3	B1	C1	d1, d2, d3,d4, d5
	Nutrients management for fish welfare	A3	B1	C1	d1, d2, d3,d4, d5

Assessment-ILOS matrix

Assessment	ILOS				Weighting of assessment
	Knowledge and understanding	Intellectual	Professional and practical	General and transferable	%
Practical exam			c1, c2, c3	d1, d2, d3,d4, d5	30%
Oral exam	a1, a2,a3	b1,b2,b3		d1, d2, d3,d4, d5	20%
Written exam	a1, a2,a3	b1,b2,b3			50%

Head of Department:

Prof. Dr. Abdelnasser Abdellatif Bakr

Course coordinator:

Dr. Eldsoky Elsaid Nassef

Course specification (2021 / 2022)

1 - Basic Information:

Code number:

Course title: **Fish Pathology**

Academic Year: Diploma programs (Fish Diseases)

Total teaching hours: 144hrs

Lectures: 48hr

Practical: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

To provide student with basic knowledge and skills concerning with different diseases affecting fish.

Enable students to differentiate between the different causative agents based on macro and microscopic findings.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1- Describe the pathological alterations developed in diseases affecting fish.

A2- Recognize the suspected diseases based on gross and microscopic findings.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- Correlates gross and microscopic findings with clinical picture.

B2- Evaluate the difference between the pathological changes induced in systems of different species of fishes by bacterial, viral and parasitic diseases.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1-Examine stained sections from affected fish using light and electron microscopes.

C2-Detect the pathological pictures of different fish diseases.

C3-Identify the difference between pathological alterations induced in the fish diseases on the basis of severity of the lesions.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Coach and work in groups.

D2-Classify different duties

D3- Utilize computer and internet skills.

D4-Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours of lectures	Hours for practical
Digestive system Diseases	28	11	17
Respiratory system Diseases	19	7	12
Genital system Diseases	25	9	16
Immune system Diseases	22	6	16
Sense organs, skin diseases	25	9	16
Viral, bacterial and parasitic fish diseases	25	9	16
Total	144	48	96

5- TEACHING & LEARNING METHODS:

***Lectures:**

using data show, white board and over head projector.

***Practical and small group sessions:**

Practical training:Practical demonstrations, practice of skills, and discussions.

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

Histopathological Drawings.

Library researches.

Internet researches.

Discussion in the researches.

Preparation of scientific reports.

*** Audiovisual**

Television circle in the practical laboratory.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-

*Activation of office hours.

*Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	One examination at the end of the academic Year	One examination at the end of the academic Year	One examination at the end of the academic Year
7.c grads	50	20	30

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Practical Department Notes: available for students to purchase from the department.
- Microscopes, slides, projector slides, Data show.

8-2: Recmended books:

- Walter and Israel(1996): general pathology ,6th.
- Dijk, J E van; Gruys, E (Erik); Mouwen, J M V M. 2007 Color atlas of veterinary pathology : general morphological reactions of organs and tissues, 2nd ed.Edinburgh ; New York : Saunders Elsevier, 2007.
- Quinn, P J; Markey, B K (Bryan K); Leonard, F C; FitzPatrick, E S; Fanning, S; Hartigan, P J. (2011) Veterinary microbiology and microbial disease, Second Edition.
- Chichester, West Sussex, UK : Wiley-Blackwell
- Ronald J. Roberts(2012)Fish Pathology, Fourth Edition Copyright © 2012 Blackwell Publishing Ltd

8-3: SUGGESTED books:

Hugh Ferguson, Ellen Bjerkas(2006) Systemic Pathology of Fish: A Text and Atlas of Normal Tissue Responses in Teleosts, and Their Responses in Disease.

8.4: web sites and jouranlsand so on

- WWW.PubMed.com
- www.Vet.net.com
- *Egyptian journal of comparative pathology*
- *Americanjournal of pathology.*
- *Journal of veterinary science*

Intended learning out comes of each topic

TOPIC	K.U (a)	IS (b)	P.P.S (c)	G.T.S (d)
Digestive system Diseases	A1 A2-	B1-B2	C1-C2-C3-	D1-D2-D4
Respiratory system Diseases	A1-A2-	B1,B2	C1-C2-C3	D1-D2-D3-D4
Genital system Diseases	A1-A2-	B1,B2	C1-C2-C3	D1-D2-D4

Immune system Diseases	A1- A2-	B1,B2	C1-C2-C3	D1-D2-D4
Sense organs, skin diseases	A1- A2-	B1,B2	C1-C2-C3	D1-D2-D4
Viral, bacterial and parasitic fish diseases	A1- A2-	B1,B2	C1-C2-C3	D1-D2-D4

Evaluation Intended learning out comes

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	general	
Written examination	A1.A2.	B1.B2		D3	50
Oral examination	A1.A2.	B1.B2		D4	20
Practical examination		B2	C1.C2.C3.	D1,D2	30

Course Coordinator:

Dr. Nagwan El-Habashi

Head of Department:

Prof. Dr. Ahmed Elsawak



Kafrelsheikh University
Faculty of Veterinary Medicine



Kafrelsheikh University

Faculty of Veterinary Medicine

Department of food control

Program Specification for Master Degree

(2021 - 2022)

Program Title:

Master of The Veterinary Science

(Food hygiene)



A- Administrative information:

- 1- **Awarding Body:** Kafrelsheikh University
- 2- **Teaching Body:** Faculty of Veterinary Medicine
- 3- **Department responsible:** food control
- 4- **Program Title:** Food hygiene
- 5- **Final award:** Diploma Degree
- 6- **Registration period:** one year
- 7- **Program Co- coordinator:** Prof. Dr.: Azaa Merghani Deeb

B- Professional Information

1- Programme Aims

- Provide postgraduate with critical understanding, application of the research methodologies and techniques relevant to all aspects of milk and meat hygiene and control including: (a) Manufacturing of milk and meat products, (b) Prevention and control of zoonotic diseases transmitted by milk, egg, meat, fish and their products, (c) Extending the shelf-life of milk, egg, meat, fish and their products
- Create new knowledge and understanding through the process of research & inquiry.
- A Good grade in Diploma can serve as a basis for admission to Master study in veterinary science in the field of Food Hygiene and Control.

2- Academic standards:

Academic reference standards (ARS) adopted by the faculty committee No 1(14/9/2014)

3-Graduate attributes:

Upon successful completion of the program, the graduate has the ability for:

1. Recognizing the basic theories and knowledge in microbiology and chemistry



- of milk, meat and their products.
2. Mastering professional skills in examination of food of animal origin to determine their microbiological safety, chemical constituents and adulteration according to national and international standards.
 3. Identification of manufacturing and microbiological defects of milk and dairy products and suggesting suitable and economic methods for controlling them.
 4. Decision making for suggesting the cause of food poisoning.
 5. Understanding his role in society development and community preservation by conserving public health and providing high quality and healthy food of animal origin.
 6. Communication in a good manner with all persons sharing in food chain including doctors, technician and workers in the laboratories and factories.
 7. Leading professional work team in the laboratory and factory.
 8. Realizing the importance of self and life-long learning and progress with transferring of his knowledge and experience to others.
 9. Reflecting the commitment to act with integrity and credibility in laboratories analyze food of animal origin.

4-Programme outcomes [intended learning outcomes (ILOs)]

a. Knowledge and understanding:

By the end of this program the graduate should be able to:

- a.1. Recognize the basic concepts and theories for chemical and microbiological analysis of milk, meat and their products.
- a.2. Summarize the national and international ethics and standards in manufacturing and examination of food of animal origin including milk, meat fish and their products.
- a.3. Identify the basics and principles of quality assurance system required for manufacturing of milk and meat products.
- a.4. Discuss the effect of production of safe milk and meat products on human health.

a) Intellectual skills

By the end of this program the graduate should be able to:

- b.1. Analyze and judge the problems in manufacturing steps of milk and meat products that may cause defects in these products and arrange them



according to their significance.

- b.2. Relate between the obtained results of physical, chemical and microbiological analysis of abnormal milk and meat products and suggest solutions for these problems.
- b.3. Plan for a scientific research in the field of Food Hygiene and Control.
- b.4. Assess risks facing manufacturing of dairy and meat products through application of Hazard Analysis and Critical Control Points (HACCP).
- b.5. Using appropriate intellectual strategy and evidence based decisions to deal with laboratory diagnostic problems and make decisions.

b) Professional and practical skills

By the end of this program the graduate should be able to:

- c.1. Master the conventional and modern techniques to determine the safety and hygienic quality of milk, meat, dairy products, meat products and eggs.
- c.2. Write a professional and conclusive laboratory report enabling food inspectors and/or producers to make right decisions.

c) General and transferable skill

By the end of this program, the graduate should be able to:

- d.1. Communicate efficiently with teaching staff, colleagues and the community
- d.2. Utilize information technology in scientific research and publications.
- d.3. Self-assessment and identification of his personal educational needs.
- d.4. Utilize different and recent sources of knowledge and information.
- d.5. Respect the importance of team work and managing time efficiently.
- d.6. Lead a team in familiar professional contexts.
- d.7. Use the tools important for self and continuous learning.

5-program structure

Courses – one academic year

Course	Lecture (hours/week)	Practical (hours/week)
Dairy Hygiene and Control	2	2
Meat Hygiene and Control	2	2
Food Microbiology	1	2
Chemical Analysis of Food	1	1



Food Technology and Preservation	1	2
total	7	9

6-Teaching and Learning Methods:

The program features a variety of teaching approaches for different intended learning objectives, including lectures, practical and lab sessions, site visits and seminars.

7- Student assessment:

The program courses depends on different assessment ways:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills

Assessment of program intended learning outcome

Tool or method	ILOs			
	K & U (a)	I.S (b)	P.P (c)	G.T (d)
Written	1-4	1,2,4,5,		1-7
Oral	1-4	1,3,4		1-7
Practical		1,2	1-2	1-7

8-Marking scale as follow:-

Grade	Percentage
Excellent	> 90
Very good	>80
Good	>70



Pass		>60
Fail	weak	45 to less than 60
	very weak	Less than 45

9-Evaluation of program outcomes

Code	Evaluator	Tools	Sample
1	Postgraduate students	Questioners	20%
2	Stakeholder	Questioners & Open discussion	10
3	Alumni	Questioners	15
4	External examiners	Report	1
5	External evaluators	Report	1

10. Program Admission Requirements:

Applicant must normally satisfy the Faculty of Veterinary Medicine University of kafrelsheikh general entrance and requirement.

- The applicant must have regular attendance in his courses according to the schedule of the faculty.

11. Regulations for progression of program

- Registration period for the Diploma in veterinary medicine sciences is one year after the approval date by the Faculty council, The student should conduct the courses proposed by both department council and approved by postgraduate and research committee and faculty council (article 32) in regulation law list and the student will entitled to apply for the exam. only after meeting attendance rate for each courses.
- The student should pass written, practical and oral exams successfully in all courses, and the grade will be estimated according to in regulation law list.
- The Faculty council has the right to deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- Registration will be during September of each year.



- e) Failure in or depriving from entering one or more course did not requires reexamination of successful passed courses.

12-Examination Regulations

- a- Time of written exam, 3 hours for each course that has 3 hours or more for lecture / practical /week. **If has less than 3 hours/week, the time of exam, is 2 hours only.**
- b- The final degree of each course which has 3 hours (lecture and practical) per week is **100 and less than 3 hours is 50 degree and divided into 50% for written exam, and 50% for practical and oral exam.**

Program Co-coordinator:

Prof.dr.Azaa Merghani Deeb

Head of Department

Prof. Dr. Nader Yehia Mostafa

Matching program ILOs with ARS - Matrix

Prog. ILOs	ARS																	
	K&U (a)				I.S. (b)					P.P. (c)		G.T. (d)						
	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7
K&U	1	2	3	4														
I.S.					1	2	3	4	5									
P.P.										1	2							
G.T.												1	2	3	4	5	6	7

ARS for Diploma in Food hygiene

1) Graduate attributes

At the end of the program, graduate must be able to::

- Apply the basics and methodologies of scientific research in the field of assessment and improvement of food quality and hygiene with the use of its different tools.
- Identify the professional problems which affect the quality of food and suggest solutions of dairy and meat industries.
- Mastering the skills in food inspection, food examination and quality control and use modern technology to serve their professional practice.
- Communicate effectively with other members in the professional field of food hygiene and control and lead professional work team in field of food quality assessment and improvement.
- Make a decision according to the findings of physical inspection of the food and the laboratory analytical results taking in consideration the national and international standards for different kinds of food.
- Effective use of the available resources efficiently to obtain accurate results.
- Be aware with his role in society development and community preservation through insuring public health safety.
- Reflect the commitment to act with integrity, credibility, and the rules of profession in assuring food safety and conserving people health.
- Realize the importance of self and life-long learning and progress.

A) Knowledge and understanding

Adopted ARS		NARS (Diploma)	
	<i>By the end of this program the graduate should understand and accommodate the following:</i>		<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	The theories and principles of microbiology and chemistry of milk, meat and dairy products.		Basics, theories and specific knowledge in educational field and sciences related to professional practice
2)	The legal and ethical basics in examination of milk, meat and dairy products and dealing with their quality problems.		Ethical and legal principles related to professional practice
3)	The principles and basics of quality assurance food hygiene and control and application of quality standards of food examination and analysis.		Basics and principles of quality assurance in professional practice in the field of specialization
4)	The mutual effect of the professional practice in food analysis and its impact on environment (conserving people health and leave laboratory hazards) and learn to maintain clean healthy environment.		Impact of professional practice on environment and work to preserve and maintain the environment

B) Intellectual skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Analyze and judge the problems in dairy and meat technology and hygiene and analog to solve problems giving priority to the most hazardous one.	Determination and analysis of professional problems in the field of specialization and arranging them according to priorities
2)	Relate between different knowledge and experiences to solve problems facing food quality and control.	Solving professional problems in specialization field
3)	Participate in preparing research plan in and/ or write scientific article on a research problems of dairy and meat hygiene and control with reviewing and analysis the previous researches and scientific topics about food hygiene and control	Analytical reading of researches and scientific topics in the field of specialization
4)	Assess risks of professional practices in the area of dairy and meat industry in a manner enabling them to eliminate or avoid this risk.	Risk assessment in professional practice.
5)	Using appropriate intellectual strategy and evidence based decisions to deal with laboratory diagnostic problems and make decisions and judgment according to the Egyptian and international standards related to each kind of food.	Professional decision making using available information

C) Professional and practical skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Master basic and recent professional skills and advanced procedures in food microbiology and chemistry of milk, meat and dairy products.	Applying professional skills in the field of specialization
2)	Write and evaluate a professional and conclusive laboratory report enabling food inspectors and/or producers to make right decisions.	Writing professional reports

D) General and transferable skill

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should</i>	<i>By the end of this program the</i>

	<i>understand and accommodate the following:</i>	<i>graduate should understand and accommodate the following:</i>
1)	Effective communication with teaching staff, colleagues and the community	Effective communication
2)	Utilizing information technology in scientific research and publications.	Utilizing information technology to serve development of professional practice.
3)	Updating information and knowledge and exchange it with staff and colleagues.	Self-assessment and determination of personal educational needs.
4)	Identifying and using different sources of information and knowledge in clinical pathology and other related topics	Using different resources to obtain knowledge and information.
5)	Respecting the importance of team work and do good control of time.	Working in team and efficient time management.
6)	Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team	Leading a team in familiar professional contexts.
7)	Using the tools important for self and continuous learning	Self and continuous learning

أولاً: برامج دبلومه الدراسات العليا

١- مواصفات الخريج

خريج برنامج دبلومه الدراسات العليا في أي تخصص يجب أن يكون قادراً على:

١. تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
 ٢. تحديد المشكلات المهنية و اقتراح حلولاً لها
 ٣. إتقان المهارات المهنية واستخدام الوسائل التكنولوجية المناسبة في ممارسته المهنية
 ٤. التواصل و قيادة فرق العمل من خلال العمل المهني المنظمي
 ٥. اتخاذ القرار في ضوء المعلومات المتاحة
 ٦. توظيف الموارد المتاحة بكفاءة
 ٧. الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة
 ٨. التصرف بما يعكس الالتزام بالنزاهة و المصداقية و قواعد المهنة و تقبل المسائلة و المحاسبة
 ٩. إدراك ضرورة تنمية ذاته و الانخراط في التعلم المستمر
- ٢- المعايير القياسية العامة
- ١ المعرفة و الفهم. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على فهم و استيعاب كل من:

- أ- النظريات و الأساسيات و المعارف المتخصصة في مجال التعلم وكذا العلوم ذات العلاقة بممارسته المهنية
 - ب- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص
 - ج- مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص
 - د- تأثير لممارسة المهنية على البيئة و العمل على الحفاظ على البيئة و صيانتها
- ٨

٢ المهارات الذهنية. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على:

- أ- تحديد و تحليل المشاكل في مجال التخصص و ترتيبها وفقاً لأولوياتها

- ب- حل المشاكل المتخصصة في مجال مهنته
ج- القراءة التحليلية للأبحاث و المواضيع ذات العلاقة بالتخصص
د- تقييم المخاطر في الممارسات المهنية
هـ- اتخاذ القرارات المهنية في ضوء المعلومات المتاحة
- ٣ المهارات المهنية. ٢**
بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
أ- تطبيق المهارات المهنية في مجال التخصص
ب- كتابة التقارير المهنية
- ٤ المهارات العامة و المنتقلة. ٢**
بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
أ- التواصل الفعال بأنواعه المختلفة
ب- استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية
ج- التقييم الذاتي و تحديد احتياجاته التعليمية الشخصية
د- استخدام المصادر المختلفة للحصول على المعلومات و المعارف
هـ- العمل في فريق وإدارة الوقت
و- قيادة فريق في سياقات مهنية مألوفة
ز- التعلم الذاتي و المستمر

Course specification (2021 / 2022)

1 - Basic Information:

Code number... Deplom of food hygiene

Course title: **Hygienic control of milk and dairy products**

Academic Year: Deplom degree of food hygiene, year 2016-2017

Total teaching hours: 192 hrs. hrs

Lectures:96 hrs

Practical:96 hrs

2 - OVERALL AIMS OF THE COURSE:

To provide student with knowledge and skills concerning of hygienic production of milk and dairy products and to gain the skills to analyze milk and dairy products samples and to write a report about the suitability of each sample for human consumption.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of studying the course, the graduate should be able to:

- A.1 Recite knowledge about milk hygiene and control.
- A.2 Relate the knowledge about precursor of milk constituents.
- A.3 Understand knowledge about milk composition.
- A.4 Match between milk composition and factors affecting milk composition and yield.
- A.5 Identify the nutritive values of milk.
- A.6 Understand knowledge about physical properties of milk and chemical properties of milk constituents.
- A.7 Discuss hygienic handling of raw milk (application of HACCP system from dairy animal until reach to dairy plant).
- A.8 Estimate the knowledge about milk spoilage (fermentation) and abnormal milk.
- A.9 Identify abnormal milk.
- A.10 Outline and discuss basis for clean milk production.
- A.11 Explain the international organizations dealing with food, regulations and ethical codes relevant to milk.
- A.12 Outline milk-borne pathogens (Epidemic, Zoonotic diseases and isolation of causative agents) and spoilage organisms.
- A.13 State knowledge about sanitary and keeping quality of milk.
- A.14 Discuss hygienic measures during production of dairy products table eggs and fats and oils..

3-B: INTELLECTUAL SKILLS:

By the end of studying the course, the graduate should be able to:

- B.1 Assess the important problem from case interaction.
- B.2 Design appropriate quantitative and qualitative advanced methodologies.
- B.3 Originate the HACCP system at the dairy plants and revise the methods to confirm its correct application

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of studying the course, the graduate should be able to:

- C.1 Apply ideal methods to collect and transfere the samples.

C.2 Sketch the method to minimize the risks of contamination and cross infection.

C. 3 Examine milk samples and dairy products (physically, chemically, microbiologically and for residues).

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D.1 Draw the way by which he should be able to work effectively as a member of a team in the delivery of services to community.

D.2 Prioritize effective communication with the public, colleagues and appropriate authorities.

D.3 Apply the skills to be able to have access to the internet and retrieve information.

D.4 Write reports in a form that is satisfactory and understandable.

D.5 Apply primary research techniques and critical evaluation.

4 - COURSE CONTENTS:

4.A:- Topics :-

TOPIC	Total hours	Hours for lecture	Hours for practical
Introduction of milk hygiene.	8	8	-
Precursor of milk constituents.	6	6	-
Milk composition.	20	8	12
Factors affecting milk composition and yield.	12	6	6
Nutritive values of milk.	8	8	-
Physical properties of milk and chemical properties of milk constituents.	20	8	12
Hygienic handling of raw milk (application of HACCP system from dairy animal until reach to dairy plant).	14	4	10
Milk spoilage (fermentation).	22	8	14
Abnormal milk.	20	8	12
Basis for clean milk production.	10	8	2
Knowledge about the international organizations dealing with food, and laws and ethical codes relevant to milk.	8	8	-
Knowledge about milk-borne pathogens (Epidemic, Zoonotic diseases and isolation of causative agents) and spoilage organisms.	18	6	12
Sanitary and keeping quality of milk	8	4	4
Hygienic measures during production of dairy products	18	6	12
Total	192	96	96

5- TEACHING & LEARNING METHODS:

***Lectures**

(Using white board, data show and brain storming)

***Practical and small group sessions:**

1: Practical training

(Practical demonstrations, practice of skills, and discussions)

***self learning**

- (Computer researches and faculty library visits to prepare essays and presentations)
- Library researches.
- Internet researches.
- Discussion in the researches.
- Visits to dairy plants.

*** Audiovisual**

Video show in practical laboratory

6. METHODS FOR STUDENTS With limited capabilities:-

- Activation of office hours.
- Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	After 48th week	After 48th week	After 48th week
7.c grads	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Text book available in faculty library

8-2: References books:

- 8-2.a-Pesticides residues in food evaluations, FAO.
- 8-2.b-A.P.H.A. Standard Method For Examination of Dairy products.
- 8-2.c-A.H.Varnam, Food borne pathogens, Wolfe publishing Ltd.
- 8-2.d-AAOAC, Official Methods of Analysis of AOAC international.
- 8-2.e-U.S. Food and Drug Admin, Dept. of Health and Human Services. Code of Federal Regulations, Part 1, Title 21, Sections 131, 133, and 135. April 2006 Revision. <http://www.gpoaccess.gov/cfr/index.html>,
- 8-2.f-Adnan Y. Tamime (2009) Milk Processing and Quality Management . Blackwell Publishing Ltd. ISBN: 978-1-405-14530-5

8-3: Suggested materials:

- Apparatus
- Chemicals, glasses reagents and media
- Kits
- Data show

8.4: web sites and jouranlsand so on

- WWW.PubMed.com
- International of veterinary information services (IVIS)
- www.Vet.net.com
- Journal of dairy sciences
- Journal of food protection
- Journal of veterinary microbiology
- Veterinary medical journal

Course content ILOs Matrex:

TOPIC	K.U (A)	I.S (B)	P.P.S (C)	G.T.S (D)
Introduction of milk hygiene.	A1	B1		
Precursor of milk constituents.	A1-A2	B1		-D3
Milk composition.	A2-A3	B1-B2	C1-C2- C3	D1-D2-D3-D4- D5
Factors affecting milk composition and yield.	A2-A3- A4	B1-B2- B3-	C1-C2- C3	D1-D2-D3-D4- D5
Nutritive values of milk.	A2-A3-A4- A5	B1		-D3
Physical properties of milk and chemical properties of milk constituents.	-A3-A4- A6		C1-C2- C3	D1-D2-D4- D5
Hygienic handling of raw milk (application of HACCP system from dairy animal until reach to dairy plant).	A7	B1-B2- B3	C1-C2- C3	D1-D2-D4- D5
Milk spoilage (fermentation).	A8	B1-B2- B3	C1-C2- C3	D1-D2-D4- D5
Abnormal milk.	A3-A4-A9- A11	B1-B2- B3	C1-C2- C3	D1-D2-D3-D4- D5
Basis for clean milk production.	A3-A4-A8- A9- A10- A11	B1-B2- B3	C1-C2- C3	D1-D2-D3-D4- D5
Knowledge about the international organizations dealing with food, and laws and ethical codes relevant to milk.	A3-A11			D3
Knowledge about milk-borne pathogens (Epidemic, Zoonotic diseases and isolation of causative agents) and spoilage organisms.	A7-A8-A9- A10- A12	B1-B2- B3	C1-C2- C3	D1-D2-D3-D4- D5
Sanitary and keeping quality of milk	A3- A7- A8-A9- A10-A11- A13	B1-B2- B3	C1-C2- C3	D1-D2-D4-D5
Hygienic measures during production of dairy products	A3--A4- A5-A7-A8- A9-A10- A11- A12- A13- A14	B1-B2- B3	C1-C2- C3	D1-D2-D3-D4- D5

Assessment ILOs Matrix:

TOOLS	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	General	
Written examination	A1-A2-A3-A4-A5-A6- A7-A8- A9-A10 A11- A2-A13- A14			D4	50
Oral examination	A1-A2-A3-A4-A5-A6- A7-A8- A9-A10 A11- A2-A13 -A14	B3.		D2	25
Practical examination		B1.B2.B3	C1.C2.C3	D1.D2.D4.D5	25

Course Coordinator:

Prof. Dr. Ibrahim Mohamed aman

Head of Department:

Prof. Dr. Nader Yehia Mostafa

Course specification

(2021/ 2022)

1 - Basic Information:

Course title: **Hygienic control of meat and meat products**

Academic Year: **Diploma.**

Total teaching hours: 192 hrs

Lectures: **96**

Practical/small group sessions: 96

2 - OVERALL AIMS OF THE COURSE:

To provide student with basic knowledge and skills concerning of hygienic production of meat and meat products and to gain the skills to analyze meat samples and meat products and to write a report about the suitability of each sample for human consumption.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A.1 write on meat hygiene.
- A.2 Explain meat composition.
- A.3 Discuss keeping quality of meat
- A.4 List the Factors affecting meat composition
- A.5 Identify Nutritive values of meat
- A.6 Write on Hygienic handling of meat (application of HACCP system from animal until reach to slaughter plant).
- A.7 State meat spoilage
- A.8 Recognize on the abnormal meat
- A.9 locate the Basis for hygienic production of meat
- A.10 Rescite the international organizations dealing with food, and laws and ethical codes relevant to meat
- A.11 Infer Meat -borne pathogens (Epidemic, Zoonotic diseases and isolation of causative agents) and spoilage organisms.
- A.12 Outline the sanitary condition of meat carcass
- A.13 Predict the hygienic measures during production of meat products

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B.1 Appraise the important problem from case interaction, utilizing available.
- B.2 Design the appropriate quantitative and qualitative methodologies.
- B.3 Assess the HACCP system at the meat plants and methods to confirm its correct application

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C.1 Apply ideal methods to collect and transference the samples.
- C.2 Sketch the method to minimize the risks of contamination and cross infection.
- C.3 Examine meat samples and meat products (physically, chemically, microbiologically and for residue).

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D.1 Draw the way by which he should be able to work effectively as a member of a team in the delivery of services to community.
- D.2 Prioritize effective communication with the public, colleagues and appropriate authorities.
- D.3 Apply the skills to be able to have access to the internet and retrieve information.
- D.4 Write reports in a form that is satisfactory and understandable.
- D.5 Apply primary research techniques and critical evaluation.

4 - COURSE CONTENTS:

4:semester topics:-

TOPIC	Total hours (Semester)	Hours for lecture	Hours for practical
Introduction of meat hygiene.	8	8	-
meat composition.	6	6	6
keeping quality of meat	20	12	14
Factors affecting meat composition	16	8	8
Nutritive values of meat	8	8	-
Hygienic handling of meat (application of HACCP system from animal until reach to slaughter plant).	20	6	14
meat spoilage	16	8	8
Abnormal meat	22	8	14
Basis for hygienic production of meat	16	6	10
knowledge about the international organizations dealing with food, and laws and ethical codes relevant to meat	10	8	4
Knowledge about meat -borne pathogens (Epidemic, Zoonotic diseases and isolation of causative agents) and spoilage organisms.	22	14	14
Sanitary condition of meat carcass	4	4	4
Total	192	96	96

5- TEACHING & LEARNING METHODS:

***Lectures**

(using data show, white board, overhead projector and brain storming)

***Practical and small group sessions:**

1: Practical training.

(Practical demonstrations, practice of skills, and discussions)

*** Self learning**

- Computer researches and faculty library visits to prepare essays and presentations.
 - Library researches.
 - Internet researches.
 - Discussion in the researches.
 - Preparation of posters

- Preparation of scientific reports.

* **Audiovisual**

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	After the end of 48 weeks	After the end of 48 weeks	After the end of 48weeks
7.c grads	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Text books in faculty library

8-2: Recmended books:

- 8.2.a Warriss, P. D. (2001). Meat science: Cabi.
- 8.2.b- Brown, M. (2000). HACCP in the meat industry: Elsevier.
- 8.2.c - Hui, Y. H., Nip, W.-K. and Rogers, R. (2001). Meat science and applications: CRC Press.
- 8.2.d -Sara Martimore and Carole Wallace: HACCP A practical approach.
- 8.2.e -A.H.Varnam: Food borne pathogens. Wolfe publishing Ltd.
- 8.2.f - Toldrá, F. (2008). Meat biotechnology: Springer Science & Business Media.

8-3: SUGGESTED books:

- Hui, Y., Astiasaran, I., Sebranek, J., Talon, R. and Toldrá, F. (2014). Handbook of fermented meat and poultry: John Wiley & Sons.
- Nollet, L. M. and Toldra, F. (2015). Handbook of Food Analysis, -Two Volume Set: CRC Press.

8.4: web sites and jouranlsand so on

- WWW.PubMed.com
- Intrnational of veterinary information services (IVIS)
- www.Vet.net.com
- <http://www.sciencedirect.com/>

Intended learning out comes of each topic in first semester

TOPIC	K.U (a)	LS (b)	P.P.S (c)	G.T.S (d)

Introduction of meat hygiene. meat composition.	A1 A1-A2	B1 B1-B2- B3		D1-D2-D4 D1-D2-D3- D4- D5
keeping quality of meat Factors affecting meat composition	A2-A3 A1-A2-A4	B1-B2- B3- B1-B2- B3-	C1- C2-C3 C1- C2-C3	D1-D2-D3- D4- D5 D1-D2-D3- D4- D5-
Nutritive values of meat	A2-A4-A5-	B1-B2- B3		D1-D2-D4- D5
Hygienic handling of meat (application of HACCP system from animal until reach to slaughter plant).	A2-A3-A4-A5- A6	B1-B2- B3	C1- C2-C3	D1-D2-D4- D5
meat spoilage Abnormal meat	A2-A3- A6-A7 A2-A3- A6-A7-A8	B2-B3 B1-B2- B3	C1 C1- C2-C3	D1-D2-D4- D5 D1-D2-D3- D4- D5
Basis for hygienic production of meat	A1-A2-A3-A4-A5- A6-A7-A8- A9-A10 A11- A12- A13	B1-B2- B3	C1- C2-C3	D1-D2-D3- D4- D5
knowledge about the international organizations dealing with food, and laws and ethical codes relevant to meat	A2-A5- A6-	B1-B2- B3	C1- C2-C3	D1-D2-D3- D4- D5
Knowledge about meat -borne pathogens (Epidemic, Zoonotic diseases and isolation of causative agents) and spoilage organisms.	A1-A2-A3-A4-A5- A6-A7-A8- A9-A10 A11- A12- A13	B1-B2- B3	C1- C2-C3	D1-D2-D3- D4- D5
Sanitary condition of meat carcass	A1-A2-A3-A4-A5- A6-A7-A8- A9-A10 A11- A12- A13	B1-B2- B3	C1- C2-C3	D1-D2-D4

Intended learning out comes Evaluation

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectual	Practical	general	
Written examination	A1-A2-A3-A4-A5- A6- A7-A8- A9-A10 A11- A12- A13	B1.B2			50
Oral examination	A1-A2-A3-A4-A5- A6- A7-A8- A9-A10 A11- A12- A13	B1.B2.B3.		D4	25
Practical examination		B3	C1.C2.C3	D1.D2.D3.D4- D5	25

Course Coordinator:

Head of Department:

Prof. Dr. Nader Yehia Moustafa

Prof.Dr. Nader Yehia Moustafa

Course specification

(2021 / 2022)

1 - Basic Information:

Code number... Deplom of food hygiene

Course title: **Food technology**

Academic Year: Deplom degree of food hygiene, year 2016-2017

Total teaching hours: 144hrs. hrs

Lectures:48hrs

Practical:96 hrs

2 - OVERALL AIMS OF THE COURSE:

To provide student with knowledge and skills concerning academic and practical knowledge of food (milk, meat, eggs, fish, poultry and their products) technology and to gain the skills for testing quality of food products, monitor and evaluate the parameters for product safety.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of studying the course, the graduate should be able to:

- A.1 - Identify food plant hygiene.
- A.2 - State the bases for dairy products manufacture.
- A.3 - Outline the bases for meat, poultry and fish products manufacture.
- A.4 - Draw the application of HACCP system on manufacture of each food product.
- A.5 – Estimate the knowledge about chemistry of food products.
- A.6 - Recite the knowledge about the microbiology of food products.
- A. 7- Write on the knowledge about food preservation.

3-B: INTELLECTUAL SKILLS:

By the end of studying the course, the graduate should be able to:

- B1-Formulate the HACCP system on manufacture of each food product.
- B.2- Create the methods to identify the important Critical control points on manufacture of each food product.
- B.3-Evaluate the parameters for product safety. .

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of studying the course, the graduate should be able to:

- C.1 - Apply the HACCP system at the food plants and methods to confirm its correct application.
- C.2 – Examine physically each food products, detect defects and judge quality.
- C.3 – Sketch the methods to asses the chemical quality of each food product.
- C.4 - Analyze each food product for its microbial quality.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D.1 Draw the way by which he should be able to work effectively as a member of a team in the delivery of services to community.
- D.2-Sort different duties
- D.3 Apply communicating skills, have access to the internet and retrieve information.
- D.4 Prioritize effective communication with the public, colleagues and appropriate authorities.
- D.5 Write reports in a form that is satisfactory and understandable.

4 - COURSE CONTENTS:

Topics :-

TOPIC	Total hours	Hours for lecture	Hours for practical
Aim and introduction to food technology	3	3	-
Assessment of plant hygiene (Monitoring and evaluation of parameters e.g. microbiology, chemical and physical for product safety)	6	2	4
Heat treatment	12	4	8
Starter culture	11	3	8
Main steps in manufacture of dairy products (cream, butter, ghee, ice cream, fermented dairy products, concentrated milk, milk powder,)	16	4	12
Main steps in manufacture of meat and fish products (sausage, pastirma, luncheon, salted fish, smoked fish,....)	16	4	12
Application of HACCP system on manufacture of each dairy products	8	4	4
Chemistry and microbiology of dairy products	12	4	8
Chemistry and microbiology of meat products	12	4	8
Spoilage and defects of food products	12	4	8
Milk byproducts (Dairy protein byproducts, fermented byproducts, industrial uses,)	12	4	8
Therapeutic value of dairy products	12	4	8
Dairy preservation (Technologies used to render food safe, keep contaminants below dangerous levels and that prevent recontamination during or after manufacture)	12	4	8
Total	144	48	96

5- TEACHING & LEARNING METHODS:

*Lectures

(Using white board, data show and brain storming)

*Practical and small group sessions:

1: Practical training (Practical demonstrations, practice skills, and discussions)

* Site visits

Two visits, one to the dairy farm and to the food plant for practical application

*self learning

(Computer researches and faculty library visits to prepare essays and presentations)

Library researches.

Internet researches.

Discussion in the researches.

Visits to dairy plants.

* Audiovisual

Video show in practical laboratory

6. METHODS FOR STUDENTS WITH LIMITED CAPABILITIES:-

- Activation of office hours.
- Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	After 48th week	After 48th week	After 48th week
7.c grads	50	20	30

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Text book available in faculty library

8-2: References books:

- 8-2.a Wilkie F. Harrigan, Laboratory Methods in Food Microbiology, Academic press limited
- 8-2.b Sara Martimore , Carole Wallace, HACCP A practical approach.
- 8-2.c A.H.Varnam, Food Borne Pathogens, Wolfe publishing Ltd.
- 8-2.d RK. Robinson, Modern Dairy Technology, Library of congress.
- 8-2.e A.P.H.A. Standard Method For Examination of Dairy products.
- 8-2.f AOAC, Official Methods of Analysis of AOAC international.
- 8-2. G Edgar Spreer, Milk and Dairy Product Technology, Marcel Dekker, Inc, New York .

8-3: Suggested materials:

- Apparatus
- Chemicals, glasses reagents and media
- Kits
- Data show

8.4: web sites and jouranlsand so on

- WWW.PubMed.com
- International of veterinary information services (IVIS)
- www.Vet.net.com
- Journal of dairy sciences
- Journal of food protection
- Journal of food and drug analysis
- Veterinary medical journal

Course content ILOs Matrex:

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Aim and introduction to food technology	A1			
Assessment of plant hygiene (Monitoring and evaluation of parameters e.g. microbiology, chemical and physical for product safety)	A1-A2-A3- A4-A5-A6	B1-B2- B3	C1	D1-D2-D3- D4- D5-
Heat treatment	A2-A4-A5- A6-A7	B1-B2- B3-	C1	D1-D2-D3- D4-
Starter culture	A2-A4 -A5- A6-A7	B1-B2- B3-	C1- C4	D1-D2-D3- D4-
Main steps in manufacture of dairy products (cream, butter, ghee, ice cream, fermented dairy products, concentrated milk, milk powder,)	A2- -A4-A5- A6-A7	B1-B2- B3	C1-C2- C3-C4	D1-D2-D4- D5-
Main steps in manufacture of meat and fish products (sausage, pasturma, luncheon, salted fish, smoked fish,)	-A3-A4-A5- A6-A7	B1-B2- B3	C1-C2- C3-C4	D1-D2-D4- D5-
Application of HACCP system on manufacture of each dairy products	A1-A2	B2-B3	C1	D1-D2-D4- D5
Chemistry and microbiology of dairy products	A2-A5-A6	B1-B2- B3	C2-C3	D1-D2-D3- D4- D5
Chemistry and microbiology of meat products		B1-B2-	C2-C3-	D1-D2-D3-

	A3-A5-A6	B3		D4- D5
Spoilage and defects of food products	A5-A6	B1-B2- B3	C2-C3- C4	D1-D2-D3- D4- D5
Milk byproducts (Dairy protein byproducts, fermented byproducts, industrial uses,)	A3-A5-A6	B1-B2- B3	C2-C3- C4	D1-D2-D4- D5
Therapeutic value of dairy products	A2-A3-A5- A6	B1-B2- B3	C1-C2- C3-C4	D1-D2-D4- D5
Dairy preservation (Technologies used to render food safe, keep contaminants below dangerous levels and that prevent recontamination during or after manufacture)	A1-A2-A3- A5-A6-A7	B1-B2- B3	C1-C2- C3-C4	D1-D2-D4- D5

Assessment ILOs Matrix:

TOOLS	I.L.O.S Evaluation			Marks	
	Knowledge	Intellectual	Practical		General
Written examination	A1.A2.A3.A4.A5.A6,A7	B1.B2			50
Oral examination	A1.A2.A3.A4.A5.A6,A7	B1.B2.B3.		D4	20
Practical examination		B3	C1.C2.C3.C4	D1.D2.D3.D4	30

Course Coordinator:
Prof. Dr. Nader Y. Moustafa

Head of Department:
Prof. Dr. Nader Y. Moustafa

Course specification (2021 / 2022)

1 - Basic Information:

Code number...Deplom food hygiene

Course title: **Food microbiology**

Academic Year: **Deplom degree of food, year 2016-2017**

Total teaching hours: 144 hrs. hrs

Lectures:48hrs

Practical:96 hrs

2 - OVERALL AIMS OF THE COURSE:

To provide student with knowledge and skills concerning food microbiology (milk, dairy products, egg, egg products, meat, meat products, poultry meat, poultry products, fish and fish products) and to gain the skills to analyze samples of milk, egg, meat, poultry meat, fish and their products microbiologically and to write a report about the suitability of each sample for human consumption.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of studying the course, the graduate should be able to:

- A.1 Discuss sources of milk, dairy products, egg and egg products contamination.
- A.2 State the sources of contamination of meat, meat products, poultry meat, poultry products, fish and fish products.
- A.3 Recite factors affecting microbial growth.
- A.4 Explain the knowledge about indicator organisms.
- A.5 Write on the knowledge about Microbiology of raw and market milk.
- A.6 Outline dairy products microbiology.
- A.7 Relate microbiology of meat and meat products
- A.8 Predict knowledge about microbiology of poultry meat and poultry products
- A.9 Estimate the knowledge about microbiology of fish and fish products
- A.10 Identify microbiology of eggs
- A.11 Liste the knowledge about meat, poultry and fish-borne pathogens and spoilage organisms.
- A.12 infer the microbial defects in meat, poultry and fish products.
- A.13 Confirm the knowledge about milk-borne pathogens and spoilage organisms.
- A.14 Paraphrase the microbial defects in milk and dairy products.

3-B: INTELLECTUAL SKILLS:

By the end of studying the course, the graduate should be able to:

- B.1 Assess the important problem from case interaction.
- B.2 Formulate appropriate quantitative and qualitative advanced methodologies.
- B.3 Originate the HACCP system at the dairy plants and revise the methods to confirm its correct application

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of studying the course, the graduate should be able to:

- C.1 Examine, compare and report the samples.
- C.2 Sketch the method to minimize the risks of contamination and cross infection.
- C.3 Examine milk, egg, dairy products and egg products samples, microbiologically and apply the sensitivity test to the isolated organisms.

C.4 Analyze meat, meat products, poultry meat, poultry products, fish and fish products samples microbiologically and apply the sensitivity test to the isolated organisms

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D.1 Draw the way by which he should be able to work effectively as a member of a team in the delivery of services to community.
- D.2 Prioritize effective communication with the public, colleagues and appropriate authorities.
- D.3 Apply the skills to be able to have access to the internet and retrieve information.
- D.4 Write reports in a form that is satisfactory and understandable.
- D.5 Apply primary research techniques and critical evaluation.

4 - COURSE CONTENTS:

4.A:- Topics :-

TOPIC	Total hours	Hours for lecture	Hours for practical
Sources of milk and dairy products contamination	12	4	8
Sources of contamination of meat, meat products, poultry meat, poultry products, fish and fish products.	12	4	8
Factors affecting microbial growth	15	5	10
indicator organisms	15	5	10
Microbiology of raw and market milk.	9	3	6
Dairy products microbiology	9	3	6
Microbiology of meat and meat products	9	3	6
Microbiology of poultry meat and poultry products	9	3	6
Microbiology of fish and fish products	9	3	6
Microbiology of eggs	9	3	6
Meat, poultry and fish-borne pathogens and spoilage organisms	12	4	8
Microbial defects in meat, poultry and fish products	6	2	4
Microbial defects in milk and dairy products	6	2	4
Milk-borne pathogens and spoilage organisms	12	4	8
Total	144	48	96

5- TEACHING & LEARNING METHODS:

***Lectures**

(Using white board, data show and brain storming)

***Practical and small group sessions:**

1: Practical training

(Practical demonstrations, practice of skills, and discussions)

*** Site visits**

Two visits, one to the dairy farm and one to the food processing plant for practical application

***self learning**

(Computer researches and faculty library visits to prepare essays and presentations)
 Library researches.
 Internet researches.
 Discussion in the researches.
 Visits to dairy plants.

*** Audiovisual**

Video show in practical laboratory

6. METHODS FOR STUDENTS WITH LIMITED CAPABILITIES:-

- Activation of office hours.
- Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	After 48th week	After 48th week	After 48th week
7.c grads	50	20	30

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Text book available in faculty library

8-2: References books:

- 8-2.a-Pesticides residues in food evaluations, FAO.
- 8-2.b-A.P.H.A. Standard Method For Examination of Dairy products.
- 8-2.c-A.H.Varnam, Food borne pathogens, Wolfe publishing Ltd.
- 8-2.d-AAOAC, Official Methods of Analysis of AOAC international.
- 8-2.e-U.S. Food and Drug Admin, Dept. of Health and Human Services. Code of Federal Regulations, Part 1, Title 21, Sections 131, 133, and 135. April 2006 Revision. <http://www.gpoaccess.gov/cfr/index.html>,
- 8-2.f-Adnan Y. Tamime (2009) Milk Processing and Quality Management . Blackwell Publishing Ltd. ISBN: 978-1-405-14530-5

8-3: Suggested materials:

- Apparatus
- Chemicals, glasses reagents, media and Kits
- Data show

8.4: web sites and jouranlsand so on

- WWW.PubMed.com
- International of veterinary information services (IVIS)
- www.Vet.net.com
- Journal of FDA
- Journal of food protection
- Journal of veterinary microbiology
- Veterinary medical journal

Course content ILOs Matrex:

TOPIC	K.U	I.S	P.P.S	G.T.S
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	(A)	(B)	(C)	(D)
Sources of milk and dairy products contamination	A1	B1- B3	C2	D1-D2--D4-D5
Sources of contamination of meat, meat products, poultry meat, poultry products, fish and fish products.	A2	B1- B3	C2	D2-D3-D4-
Factors affecting microbial growth	A1-A2-A3-	B1-B2-B3-	C2	D2-D3-D4-
indicator organisms	A1-A2-A3-A4	B1-B2-B3-	C1-C2-C3	D2-D3-D4-D5
Microbiology of raw and market milk.	A1-A3 A4-A5	B1-B2-B3	C1-C2-C3	D1-D2-D4-D5
Dairy products microbiology	A1--A3-A4 A5--A6	B1-B2-B3	C1-C2-C3	D1-D2-D4-D5
Microbiology of meat and meat products	A2-A3-A4-A7	B2-B3	C1-C2-C4	D1-D2-D4-D5
Microbiology of poultry meat and poultry products	A2-A3-A4- - A8	B1-B2-B3	C1-C2-C4	D1-D2-D3-D4- D5
Microbiology of fish and fish products	A2-A3-A4- A9	B1-B2-B3	C1-C2-C4	D1-D2-D3-D4- D5
Microbiology of eggs	A1-A3-A4- A10	B1-B2-B3	C1-C2-C3	D1-D2-D3-D4- D5
Meat, poultry and fish-borne pathogens and spoilage organisms	A2-A3-A4-A7- A8- A9- A11	B1-B2-B3	C1-C2-C4	D1-D2-D4-D5
Microbial defects in meat, poultry and fish products	A2-A3-A4-A7- A8- A9- A11- A12-	B1-B2-B3	C1-C2-C4	D1-D-D4-D5
Microbial defects in milk and dairy products	A1--A3 A4-- A5-A6-A13-	B1-B2-B3	C1-C2-C3	D1-D2-D4 D5
Milk-borne pathogens and spoilage organisms	A1--A3 A4-- A5-A6-A13- A14	B1-B2-B3	C1-C2-C3	D1-D2-D4 D5

Assessment ILOs Matrix:

TOOLS	I.L.O.S Evaluation				Marks
	Knowledge	Intellectual	Practical	General	
Written examination	A1-A2-A3-A4-A5 - A6-A7-A8- A9-A10 A11- A12-A13-A14	B1.B2			50
Oral examination	A1-A2-A3-A4-A5 - A6-A7-A8- A9-A10 A11- A12-A13-A14	B1.B2.B3.		D4- D5	20
Practical examination		B3	C1.C2.C3.C4	D1.D2.D3.D5	30

Course Coordinator:

Prof. Dr. Hossam Farouk Ahmed

Head of Department:

Prof. Dr. Nader Y. Moustafa

Course specification (2021 / 2022)

1 - Basic Information:

Code number... Deplom of food hygiene

Course title: **Food analysis**

Academic Year: Deplom degree of food hygiene, year

Total teaching hours: 96hrs. hrs

Lectures:48hrs

Practical:48 hrs

2 - OVERALL AIMS OF THE COURSE:

To provide the students with the basic knowledge about the composition of milk, dairy products, egg, fats, oils, meat, meat products, poultry meat, poultry products, fish and fish products, and to gain the skills to analyze milk, dairy products, egg, fats, oils, meat, meat products, poultry meat, poultry products, fish and fish products physically and chemically and to write a report about the suitability of each sample for human consumption.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of studying the course, the graduate should be able to:

A.1: State the knowledge about food inspection.

A.2: Identify the principles of food analysis techniques.

A.3: Outline the knowledge about the international organizations dealing with food, laws and ethical codes relevant to food.

A.4: Recite the knowledge about analysis of milk and dairy products.

A.5: Write on the knowledge about analysis of fats and oils.

A.6: Estimate the knowledge about testing of eggs.

A.7: Discuss the knowledge about analysis of meat and meat products.

A.8: Relate the knowledge about analysis of poultry and their products.

A.9: Liste the knowledge about testing of fish and their products.

3-B: INTELLECTUAL SKILLS:

By the end of studying the course, the graduate should be able to:

B.1: Design the essential precautions for sampling.

B.2: Creat the methods to minimize the risks of samples contamination.

B.3: Judge the defects in each sample.

B.4: Formulate and apply appropriate quantitative and qualitative methodologies.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of studying the course, the graduate should be able to:

C.1 Apply ideal methods to collect and transfere the samples.

C.2: Examine milk and milk product samples (physically, chemically, and for residues).

C.3: Analyze fats, oils and egg samples (physically, chemically, and for residues).

C.4: Compare meat and meat product samples (physically, chemically, and for residues).

C.5: Report poultry, fish samples and their products (physically, chemically, and for residues).

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D.1 Draw the way by which he should be able to work effectively as a member of a team in the delivery of services to community.
- D.2 Prioritize effective communication with the public, colleagues and appropriate authorities.
- D.3 Apply the skills to be able to have access to the internet and retrieve information.
- D.4 Write reports in a form that is satisfactory and understandable.
- D.5 Apply primary research techniques and critical evaluation.

4 - COURSE CONTENTS:

4.A:- Topics :-

TOPIC	Total hours	Hours for lecture	Hours for practical
Sampling of food (Milk, eggs and their products, fats and oils, meat, poultry, fish and their products)	4	2	2
Food inspection	6	3	3
Principles of food analysis techniques (e.g Kjeldahl, Soxhlet.....)	8	3	5
Nutrient analysis	6	3	3
National and international standards	2	2	0
Milk and Dairy products analysis (Physical testing, chemical analysis)	12	6	6
Detection of milk and dairy products adulteration	8	4	4
Testing physical and chemical constants of fats and oils.	6	3	3
Testing of table eggs and egg products	6	3	3
Meat, poultry, fish and their products analysis (Physical testing, chemical analysis)	16	8	8
Detection of meat, poultry, fish and their products adulteration	16	8	8
Detection of potential hazardous substances in food (Antibiotics, insecticides, heavy metals, mycotoxins, ..)	6	3	3
Total	96	48	48

5- TEACHING & LEARNING METHODS:

*Lectures

(Using white board, data show and brain storming)

*Practical and small group sessions:

1: Practical training

(Practical demonstrations, practice of skills, and discussions)

* Site visits

Two visits, one to the dairy farm and to the food plant for practical application

*self learning

(Computer researches and faculty library visits to prepare essays and presentations)

Library researches.

Internet researches.

Discussion in the researches.

Visits to dairy plants.

*** Audiovisual**

Video show in practical laboratory

6. METHODS FOR STUDENTS With limited capabilities:-

- Activation of office hours.
- Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	After 48th week	After 48th week	After 48th week
7.c grads	25	12.5	12.5

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Text book available in faculty library

8-2: References books:

- 8-2.e A.P.H.A. Standard Method For Examination of Dairy products.
- 8-2.f AOAC, Official Methods of Analysis of AOAC international.

8-3: Suggested materials:

- Apparatus
- Chemicals, glasses reagents and media
- Kits
- Data show

8.4: web sites and jouranlsand so on

- WWW.PubMed.com
- International of veterinary information services (IVIS)
- www.Vet.net.com
- Journal of dairy sciences
- Journal of food protection
- Journal of food and drug analysis
- Veterinary medical journal

Course content ILOs Matrex:

TOPIC	K.U (A)	I.S (B)	P.P.S (C)	G.T.S (D)
Sampling of food (Milk, eggs and their products, fats and oils, meat, poultry, fish and their products)	A1-A2-A3	B1- B2	C1	D1-D2
Food inspection	A1-A2-A3	B1-B2-B3	C1 C2-C3-C4- C5	D1-D2-D4-D5
Principles of food analysis techniques (e.g Kjeldahl, Soxhlet.....)	A2-A3	B3-B4	C1-C2-C3-C4- C5	D1-D2-D3-D4- D5
Nutrient analysis	A2-A3	B1-B2-B4	C1-C2-C3-C4- C5	D1-D2-D3-D4- D5
National and international standards	A3	B3	C2-C3-C4-C5	D3
Milk and Dairy products analysis (Physical testing, chemical analysis)	A1-A2-A3-A4	B1-B2-B3-B4	C1-C2	D1-D2-D4-D5

Detection of milk and dairy products adulteration	A1-A2- A3-A4	B1-B2- B3-B4	C1-C2	D1-D2-D4- D5
Testing physical and chemical constants of fats and oils.	A1-A2- A3- A5	B1-B2- B3-B4	C1--C3	D1-D2-D4- D5
Testing of table eggs and egg products	A1-A2- A3-A6	B1-B2- B3-B4	C1-C3	D1-D2-D4- D5
Meat, poultry, fish and their products analysis (Physical testing, chemical analysis)	A1-A2- A3-A7- A8-A9	B1-B2- B3-B4	C1-C4-C5	D1-D2-D3- D4- D5
Detection of meat, poultry, fish and their products adulteration	A1-A2- A3-A7- A8-A9	B1-B2- B3-B4	C1-C4-C5	D1-D2-D3- D4- D5
Detection of potential hazardous substances in food (Antibiotics, insecticides, heavy metals, mycotoxins, ..)	A1-A2- A3-A4- A5-A6- A7-A8-A9	B1-B2- B3-B4	C1-C2-C3- C4- C5	D1-D2-D3- D4- D5

Assessment ILOs Matrix:

TOOLS	I.L.O.S Evaluation				Marks
	Knowledge	Intellectual	Practical	General	
Written examination	A1.A2.A3.A4.A5.A6.A7.A8.A9			D3, D4 ,D5	25
Oral examination	A1.A2.A3.A4.A5.A6.A7.A8.A9	B3		D2	12.5
Practical examination		B1.B2.B3.B4	C1.C2.C3.C4.C5	D1	12.5

Course Coordinator:

Head of Department:

Prof. Dr. Azza M. M.Deeb

Prof. Dr. Nader Y. Moustafa



Kafrelsheikh University
Faculty of Veterinary Medicine



Kafrelsheikh University

Faculty of Veterinary Medicine

Department of Animal medicine

Program Specification for Master Degree

(2021 - 2022)

Program Title:

Master of The Veterinary Science
(pet animals)



A- Administrative information:

- 1- **Awarding Body:** Kafrelsheikh University
- 2- **Teaching Body:** Faculty of Veterinary Medicine
- 3- **Department responsible:** Animal medicine
- 4- **Program Title:** Pet animals
- 5- **Final award:** Diploma Degree
- 6- **Registration period:** one year
- 7- **Program Co- coordinator:** Prof. Dr.: Medhat Nassif

B- Professional Information

1- Program aim:

- **Enhance graduate knowledge and skills in the field of pet animals medicine including the internal and infectious causes of disturbances of general systemic state such as changes in body temperature, respiration, dehydration, acid-base and electrolyte imbalance, stress-related conditions, poor growth, poor performance, unthriftiness, and emaciation.**
- **Enhance by the clinical training, in addition to establishing the relationship of these diseases to the status of animal nutrition.**
- **Augment students' self-learning skills will be via conducting internet researches concerning these diseases and introducing these researches via interactive presentation with staff members of the department.**
- **learn differential and confirmatory diagnoses, student will acquire the skills of description of relevant treatment and control methods**
- **2- Academic standards:**

Academic reference standards (ARS) adopted by the faculty committee No 1(14/9/2014)

3-Graduate attributes:

Upon successful completion of the program, the graduate has the ability for:

- 1) Application of the gained specific knowledge in pet animal and ornamental bird medicine, infectious and noninfectious, nutritional requirements of pet animals and main manage- mental practice of pet animals.
- 2) Understanding the different diseases and health problems affecting the pet



animal and ornamental bird and suggest modern solutions and vision to it and be aware with the ongoing problems and modern concepts in the area of diagnosis, treatment and control of pet animal and ornamental bird diseases.

- 3) Application of analytical methods in the area of diagnosis, treatment and control of pet animal and ornamental bird diseases.
- 4) Effective communication and lead work team during the diagnosis, treatment or control of pet animal and ornamental bird diseases.
- 5) Taking Decision by treatment or destruction of the pet animal or ornamental diseases under the available situation and knowledge.
- 6) Effective Use of the available resources and data for diagnosis and prevention of different diseases problems.
- 7) Awareness with his role in society development and community preservation.
- 8) Reflecting the commitment to act with integrity, credibility, and the rules of profession.
- 9) Realizing the importance of self and life-long learning and progress in new diseases, new diagnostic and new treatment and preventive tools.

4-Intended Learning Outcomes (ILOs)

a- Knowledge and Understanding:

By the end of this program the graduate should be able to:

- a.1. Define basic principles and practice in the field of pet animals' diseases.
- a.2. Recognize the ethical and legal principles for professional practice in the field of Pet animal medicine and infectious diseases.
- a.3. Apply efficiently the standards of quality standards in the diagnosis, treatment and prevention of Pet animal and ornamental bird.
- a.4. Identify the influence of diagnosis, treatment and prevention of pet animal diseases on surrounding environment and human and animal health

b- Intellectual Skills

By the end of this program the graduate should be able to:

- b.1. Determine different disorders and disease of Pet animal and ornamental bird.
- b.2. Solve diagnostic problems of pet animal diseases based of on the clinical and laboratory findings.
- b.3. Analyze scientific papers concerning Pet animal and ornamental bird.
- b.4. Assess risk for factors affecting the pet animal diseases.



b.5. Choose between medical and surgical interference to deal with pet animal diseases based on available data.

c- Professional and Practical Skills

By the end of this program the graduate should be able to:

- c.1.** Use and apply professional techniques for diagnosis and treatment of general animal diseases
- c.2.** Write scientific professional reports about different general disturbances and their treatment protocols

d- General and Transferable Skills

By the end of this program the graduate should be able to:

- d.1.** Communicate efficiently with teaching staff, colleagues and the community
- d.2.** Utilize information technology in scientific research and publications.
- d.3.** Update information and knowledge and exchange it with staff and colleagues.
- d.4.** Identify and use different sources of information and knowledge in clinical pathology and other related topics.
- d.5.** Respect the importance of team work and do good control of time.
- d.6.** Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team.
- d.7.** Use the tools important for self and continuous learning.

5- program Structure :

4.a- Programme duration :

One academic year.

4.b- Programme courses

No. of hours per week: according to the course requirements



Course Title	Total hours	No. of hours /week		
		Lecture	Lab.	Total
Pet animal diseases (infectious and internal medicine)	192	2	2	4
Pet animal and ornamental bird management and nutrition	96	1	1	2
Ornamental bird diseases	144	1	2	3
Surgery	144	1	2	3
Obstetric	96	1	1	2
Clinical pharmacology	96	1	1	2
Total		7	9	16

6-Teaching and Learning Methods:

The program features a variety of teaching approaches for different intended learning objectives, including lectures, practical and lab sessions, and seminars.

7- Student assessment:

The program courses depends on different assessment ways:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills

Assessment of program intended learning outcomes

Tool or method	ILOs			
	K & U (a)	LS (b)	P.P (c)	G.T (d)
Written	1-4	1,2,3,5		1-7
Oral	1-4	1,2,4		1-7
Practical		1,2,5	1-2	1-7

8-Marking scale as follow:-

Grade	Percentage
Excellent	> 90
Very good	>80



Good		>70
Pass		>60
Fail	weak	45 to less than 60
	very weak	Less than 45

9-Evaluation of program outcomes

Code	Evaluator	Tools	Sample
1	Postgraduate students	Questioners	20%
2	Stakeholder	Questioners & Open discussion	10
3	Alumni	Questioners	15
4	External examiners	Report	1
5	External evaluators	Report	1

10. Program Admission Requirements:

Applicant must normally satisfy the Faculty of Veterinary Medicine University of Kafrelsheikh general entrance and requirement.

- The applicant must have regular attendance in his courses according to the schedule of the faculty.

11. Regulations for progression of program

- a) Registration period for the Diploma in veterinary medicine sciences is one year after the approval date by the Faculty council, and it should not exceed a period of two years.
- b) The student should conduct the courses proposed by both department council and approved by postgraduate and research committee and faculty council (article 32) in regulation law list and the student will be entitled to apply for the exam. only after meeting attendance rate for each courses.



- c) The student should pass written, practical and oral exams successfully in all courses, and the grade will be estimated according to in regulation law list.
- d) The Faculty council has the right to deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- e) Registration will be during September of each year.
- f) Failure in or depriving from entering one or more course did not requires reexamination of successful passed courses.

12-Examination Regulations

- a- Time of written exam, 3 hours for each course that has 3 hours or more for lecture / practical /week. **If has less than 3 hours/week, the time of exam, is 2 hours only.**

The final degree of each course which has 3 hours (lecture and practical) per week is **100 and less than 3 hours is 50 degrees and divided into 50% for written exam, and 50% for practical and oral exam**

Course coordinators

Prof. Dr. Medhat Nassif

Prof. Dr. Magdy Al-Gaabary

Head of department

Prof. Dr. Ismail Ibrahim



Matching program ILOs with ARS - Matrix

Prog. ILOs	ARS																	
	K&U (a)				I.S. (b)					P.P. (c)		G.T. (d)						
	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7
K&U	1	2	3	4														
I.S.					1	2	3	4	5									
P.P.										1	2							
G.T.												1	2	3	4	5	6	7



Courses	Total Contact hours/ course	No. of hours / week			K.U (a)					I.S (b)					P.P (c)		G.T (d)							
		Lect.	Lab.	Total	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7		
Pet animal diseases (Medicine and Infectious Diseases)	192	2	2	4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Pet animal and ornamental bird management and nutrition	96	1	1	2	x		x	x	x	x	x	x			x	x	x	x	x	x	x	x	x	x
Ornamental bird diseases	144	1	2	3	x		x		x	x	x				x	x	x	x	x	x	x	x	x	x
Surgery	144	1	2	3	x		x		x		x	x			x	x	x	x	x	x	x	x	x	x
Obstetric	96	1	1	2			x		x	x	x	x	x		x	x	x	x	x	x	x	x	x	x
Clinical pharmacology	96	1	1	2			x		x	x	x				x	x	x	x	x	x	x	x	x	x
Total	768	7	9	16																				

ARS for Diploma in Pet animals

1) Graduate attributes

At the end of the program, graduate must be able to::

- 10) Application of the gained specific knowledge in pet animal and ornamental bird medicine, infectious and noninfectious, nutritional requirements of pet animals and main management practice of pet animals.
- 11) Understanding the different diseases and health problems affecting the pet animal and ornamental bird and suggest modern solutions and vision to it and be aware with the ongoing problems and modern concepts in the area of diagnosis, treatment and control of pet animal and ornamental bird diseases.
- 12) Application of analytical methods in the area of diagnosis, treatment and control of pet animal and ornamental bird diseases.
- 13) Effective communication and lead work team during the diagnosis, treatment or control of pet animal and ornamental bird diseases.
- 14) Taking Decision by treatment or destruction of the pet animal or ornamental diseases under the available situation and knowledge.
- 15) Effective Use of the available resources and data for diagnosis and prevention of different diseases problems.
- 16) Awareness with his role in society development and community preservation.
- 17) Reflecting the commitment to act with integrity, credibility, and the rules of profession.
- 18) Realizing the importance of self and life-long learning and progress in new diseases, new diagnostic and new treatment and preventive tools.

A) Knowledge and understanding

Adopted ARS		NARS (Diploma)	
	<i>By the end of this program the graduate should understand and accommodate the following:</i>		<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Applying theories and principles in the field of Pet animal's medicine and pet animal's infectious		Basics, theories and specific knowledge in educational field and sciences related



	diseases. (Diagnosis, treatment, prevention).	to professional practice
2)	Applying ethical and legal principles for professional practice in the field of Pet animal's medicine and infectious diseases	Ethical and legal principles related to professional practice
3)	Applying the quality basics and principles in the field of Pet animal and ornamental bird noninfectious and infectious diseases. (Diagnosis, treatment and prevention).	Basics and principles of quality assurance in professional practice in the field of specialization
4)	Realizing the impact of the ability of diagnosis, treatment and prevention of pet animal and ornamental diseases on environment and work to preserve and maintain the environment.	Impact of professional practice on environment and work to preserve and maintain the environment

B) Intellectual skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Determination different disorders and disease of pet animal and ornamental bird and analyzing them to determine its severity.	Determination and analysis of professional problems in the field of specialization and arranging them according to priorities
2)	Designing solution for different field problems of pet animal and ornamental bird.	Solving professional problems in specialization field
3)	Analytical reading of researches and books of pet animal and ornamental bird medicine and infectious diseases and understanding them.	Analytical reading of researches and scientific topics in the field of specialization
4)	Risk assessment of different risk factors affecting the pet animal and ornamental and predisposing to problems.	Risk assessment in professional practice.
5)	Professional decision making of the diseases or disorders by either medical or surgical treatment or anesthesia depending on the available information.	Professional decision making using available information

C) Professional and practical skills



Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Diagnosis, treatment, and design control programs of pet animal and ornamental diseases.	Applying professional skills in the field of specialization
2)	Writing professional reports about different cases and problems of pet animal and ornamental birds disorders and diseases.	Writing professional reports

D) General and transferable skill

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Communicate effectively with pet animal and ornamental bird owners, colleagues and surrounding community.	Effective communication
2)	Utilize the newly emerged information technology to reach the diagnosis, treatment and control of pet animal and ornamental bird the newly emerging problems in pet animal field.	Utilizing information technology to serve development of professional practice.
3)	Self-assessment and determination of personal educational needs in the field of pet animal and related science.	Self-assessment and determination of personal educational needs.
4)	Using different information resources (books, internet, etc.) to obtain knowledge and information about pet animal and ornamental bird problems.	Using different resources to obtain knowledge and information.
5)	Working in-group to control the different disorders and diseases of pet animals with effectively management of the time.	Working in team and efficient time management.
6)	Leading team of diagnosis and control of pet animal and ornamental bird problems.	Leading a team in familiar professional contexts.
7)	Self and continuous learning of basics information about pet animal and ornamental bird diseases and newly emerging problems.	Self and continuous learning



أولا: برامج دبلومه الدراسات العليا

١- مواصفات الخريج

خريج برنامج دبلومه الدراسات العليا في أي تخصص يجب أن يكون قادرا على:

١. تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
٢. تحديد المشكلات المهنية و اقتراح حلول لها
٣. إتقان المهارات المهنية واستخدام الوسائل التكنولوجية المناسبة في ممارسته المهنية
٤. التواصل و قيادة فرق العمل من خلال العمل المهني المنظومي
٥. اتخاذ القرار في ضوء المعلومات المتاحة
٦. توظيف الموارد المتاحة بكفاءة
٧. الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة
٨. التصرف بما يعكس الالتزام بالنزاهة و المصداقية و قواعد المهنة و تقبل المسائلة و المحاسبة
٩. إدراك ضرورة تنمية ذاته و الانخراط في التعلم المستمر

٢- المعايير القياسية العامة

١ المعرفة و الفهم. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على فهم و استيعاب كل من:

- أ- النظريات و الأساسيات و المعارف المتخصصة في مجال التعلم وكذا العلوم ذات العلاقة بممارسته المهنية
- ب- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص
- ج- مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص
- د- تأثير لممارسة المهنية على البيئة و العمل على الحفاظ على البيئة و صيانتها

٨

٢ المهارات الذهنية. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:

- أ- تحديد و تحليل المشاكل في مجال التخصص و ترتيبها وفقا لأولوياتها
- ب- حل المشاكل المتخصصة في مجال مهنته
- ج- القراءة التحليلية للأبحاث و المواضيع ذات العلاقة بالتخصص
- د- تقييم المخاطر في الممارسات المهنية
- هـ- اتخاذ القرارات المهنية في ضوء المعلومات المتاحة

٣ المهارات المهنية. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:

- أ- تطبيق المهارات المهنية في مجال التخصص



- ب-كتابة التقارير المهنية
٤ المهارات العامة و المنتقلة. ٢
بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
- أ-التواصل الفعال بأنواعه المختلفة
 - ب-استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية
 - ج-التقييم الذاتي و تحديد احتياجاته التعليميه الشخصية
 - د-استخدام المصادر المختلفة للحصول على المعلومات و المعارف
 - هـ-العمل في فريق وإدارة الوقت
 - و-قيادة فريق في سياقات مهنية مألوفة
 - ز-التعلم الذاتي و المستمر



KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF THERIOGENOLOGY

Course specification (2021 / 2022)

1 - Basic Information:

Code number: Obstetric.

Course title: Obstetric.

Academic Year: One year of diploma of pet animals Programme

Total teaching hours: 96 hrs

Lectures: 48 hr

Practical: 48hr

2 - OVERALL AIMS OF THE COURSE:

To supply the students with basic knowledge in the field of obstetrics in in the pet animals as well as practical skills necessary to handle any obstetrical problems occurring during pregnancy, paruriton and puerperium.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1- Recognize normal and abnormal pregnancy, parturition and puerperium in pets.

A2- Identify methods of contraceptive in pets.

A3- Define causes of dystocia in pets.

A4- Identify neonatology in pets.

A5- Treatment of puerperial problems.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- Analyze data obtained from owner as a first aid in the diagnostic processes.

B2- Construct a plan for handling a case of dystocia in pet animals.

B3- Differentiates between infectious and non-infectious causes of abortion in pets.

B4- Modify the regimes of contraceptives in pets.

B5- Write a report on pet animal case.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1- Apply methods of contraceptive.

C2 – Solve problems of super fecandation



- C3- Apply various methods of termination of pregnancy in unwanted pregnancy.
 C4- Choose the proper method for relief of dystocia in pets.
 C5- Manipulate and treat puerperal problems such as retained placenta, uterine prolapsed and postpartum infections.
 C6- Use radiology and ultrasonography for pregnancy diagnosis in pets.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1-Present patient's data in an organized and informative manner.
 D2-Communicate effectively with animal's owners using appropriate communication skills.
 D3-Demonstrate appropriate professional attitudes and behaviors in different practice situations.
 D4- Coach and work in groups.
 D5- Utilize computer and internet skills.
 D6-Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours (Semester)	Hours for lecture	Hours for practical
Normal and abnormal pregnancy in pets.	6	6	-
Contraceptives in pets	12	6	6
Termination of unwanted pregnancy in pets.	6	-	6
Normal and abnormal parturition in pets	12	12	-
Methods for handling a case of dystocia in pets.	12	-	12
Normal and abnormal puerperium in pets	12	12	-
Treatment of puerperal problems as retained placenta, metritis, pyometraetc	24	12	12
Pregnancy diagnosis in pets	12	-	12
Total	96	48	48



5- TEACHING & LEARNING METHODS:

*Lectures

using data show.

*Practical and small group sessions:

Practical demonstrations, practice of skills and discussions

* Site visits

Visits to dairy farms for practical application.

* Self learning

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- **Audiovisual**
Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

No disabled students until now, but if present the staff members in the department plan to held several meetings with the students to face any difficulties that meet the students.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	oral examination	Practical examination
7.b time	During December following the end of the year	During December following the end of ther year	two weeks before the end of the year
7.c grads	25	10	15

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Text books in Theriogenology available in library of the faculty.
- Overhead projections, Microscopes, , slides and computer presentations used during teaching.

8-2: Recmonded books:

- 8-3.a - Veterinary Reproduction and Obstetrics, 7th Ed. by Arthur G.H., et al. (1996).
- 8-3.b - Veterinary Obstetrics and Genital diseases, 3rd Ed. by Robert, G.R. (1986).
- 8-3.c - Current Therapy in Theriogenology, 1st Ed. by Morrow D.A. (1986).
- 8-3.d - Current Therapy in Large animal Theriogenology, 2nd ed., by Youngquist R.S. (2007).



8-3: SUGGESTED books:

- 8-2.a -Comparative reproductive Biology .(2007) by Schatten, H. and Constantinescu, G,M 1st Ed. Wiley-Blackwell.
 8-2.b -Bovine Reproduction (2014) by Hopper, R.M, ISBN: 978-1-118-47083-1, ,Wiley-Blackwell
 8-2.c -Insights from Animal Reproduction(2016) edited by Carreira, R. P., ISBN 978-953-51-2268-5, Publisher: InTech, Chapters published.
 8-2.d -Biotechnology of Animal Reproduction(2016) by Seneda, M.M., Silva-Santos K.C.,
 and Marinho, L.S.R.

8.4: web sites and jouranlsand so on

- 8.4.a-[Society for Theriogenology](#)
 8.4.b-[Ruminant and camelid reproductive ultrasonography](#)
 8.4.c-[REPRODUCTIVE ULTRASOUND - Virginia Herd Health Management Service](#)
 8.4.d-[Reproduction](#)
 8.4.e-J. of Animal Reproduction Science.
 8.4.f- J. of Theriogenology.
 8.4.j- Reproduction in Domestic Animals

9.1- Course content ILOs Matrix:

TOPIC	K.U (a)	LS (b)	P.P.S (c)	G.T.S (d)
Normal and abnormal pregnancy in pets.	A1	B1- B5	-	D1- D6
Contraceptives in pets	A2	B1- B5	C1-C2	D1- D6
Termination of unwanted pregnancy in pets.	-	B1- B5	C3	D1- D6
Normal and abnormal parturition in pets	A1	B1- B5	-	D1- D6
Methods for handling a case of dystocia in pets.	-	B1- B5	C4	D1- D6
Normal and abnormal puerperium in pets	A1	B1- B5	-	D1- D6
Treatment of puerperial problems as retained placenta, meritis, pyometraetc	A5	B1- B5	C5	D1- D6
Pregnancy diagnosis in pets	-	B1- B5	C6	D1- D6



9.b. Assessment ILOs Matrix:

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectual	Practical	general	
Written examination	A1.A2.A3.A4.A5	-		-	25
Oral examination	A1.A2.A3.A4.A5	B1.B2.B3.B4-B5			10
Practical examination		B1.B2.B3.B4-B5	C1, C2, C3.C4, C5, C6	D1.D2.D3.D4.D5. D6	15

Course Coordinator:

Prof. Adel A. Ramoun

Head of Department:

Prof. Dr. Essam A. Madaly



KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF SURGERY

Course specification (2021 / 2022)

1 - Basic Information:

Code number:

Course title: **Pets Surgery**

Academic Year: **Diploma of pet animals**

Total teaching hours: **144hrs**

Lectures: 48 hrs

Practical: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

The aim of the course is to provide the postgraduate students with a basic education in the field of Pets veterinary surgery. Also to enable them to gain first the experience in collecting information from different sources, develop research skills, competency in modern laboratory technology and provide the students with skills in interpretation of published literature to prepare them to incorporate and integrate new developments into research and clinical activities.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1. Recognize the basis of procedures of experimental models .

A2. Realize the basis of simulation .

A3. Identify the plan work within the governmental frame work regulation in experimental animal.

A4. Describe the advanced research techniques used in the field of experimental surgery.

A5. Undertake the original research on defined topics in experimental surgery making critical use of extensive, detailed knowledge of the field.



3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1- Able to design a research proposal in experimental Surgery.
- B2- Differentiate, Identify and evaluate the articles and collected research papers in regional veterinary surgery
- B3- Interpret, Criticize and Assess their own research data regarding the research area.
- B4- Able to judge and comment accurately upon the obtained results on his given results.
- B5- Determine area where further research is necessary and be aware beyond current ethical codes List.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1. Use the facility of the surgery theater.
- C2. Prepare the animal for surgery and practice of pre-operative procedures.
- C3. Employ a suitable anesthetic regimen for PET ANIMALS.
- C4. Operate different surgical techniques in pet animal species.
- C5. Solve the post-operative complications.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1- Perform group working , good management and problem solving ability.
- D2- Conduct good communications.
- D3- Use new technology and has the ability of self learning.
- D4- Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

Topic	No. of hours	Lecture	Practical
Pets Surgery of the gastro-intestinal tract.	48	12	24
Different tech. of skin graft.	24	6	12
Pets Surgery of the Urinary system	24	6	12
Pets ophthalmic surgery	24	6	12
Pets Surgery of the teeth and oral cavity	24	6	12
Pets surgery of the gland	24	6	12
Pets orthopedic surgery	24	6	12
Total	144	48	96



5- TEACHING & LEARNING METHODS:

*Lectures

(using data show, white board, overhead projector and brain storming)

*Practical and small group sessions:

1: Practical training.

(Practical demonstrations, practice of skills, and discussions)

* Self learning

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- Preparation of posters
- Preparation of scientific reports.

* Audiovisual

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-

*Activation of office hours.

*Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	During December following the end of premaster year	During December following the end of premaster year	two weeks before the end of the premaster year
<u>7.c grads</u>	50	20	30

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- **Department notes:** available for students to purchase from the department.

8-2: Recmended books:

- An Atlas of Veterinary Surgery, 1980 Johon Hickman and Robert G. Walker
- Dollar's Veterinary Surgery, J.J O'Connor 1982



- Veterinary Surgery, 1980 E. R Frank
- Current Concepts in Veterinary Surgery, 1985 K. Fouad, M.Saleh and M. Shokry.
- Equine Surgery, Auer, JA and Stick, JA 1999.
- Technique of large Animal Surgery, 2nd ed. A. Simon Turners, A.S.

8-3: SUGGESTED books:

- Food Animal Surgery, Noordsy, 2 nd ed 1990
- Large animal surgery

Course content ILOs Matrex:

Topic	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Pets Surgery of the gastro-intestinal tract.	A1 to A5	B1 to B5	C1to C5	D1 to D4
Different tech. of skin graft.	A1 to A5	B1 to B5	C1to C5	D1 to D4
Pets Surgery of the Urinary system	A1 to A5	B1 to B5	C1to C5	D1 to D4
Pets ophthalmic surgery	A1 to A5	B1 to B5	C1to C5	D1 to D4
Pets I Surgery of the teeth and oral cavity	A1 to A5	B1 to B5	C1to C5	D1 to D4
Pets surgery of the gland	A1 to A5	B1 to B5	C1to C5	D1 to D4
Pets I orthopedic surgery	A1 to A5	B1 to B5	C1to C5	D1 to D4

Assessment ILOs Matrix:

Methods	I.L.O.S Evaluation			general	Marks allocated
	Knowledge	Intellectual	Practical		
Written examination	A1 to A5	B1 .B3		D3	50
Oral examination	A1 to A5	B2 , B4		D4	20
Practical examination		B5	C1to C5	D1 , D2	30

Course Coordinator:

Head of Department:

Dr. Alaa Ghazy Soliman

prof. Dr. Gamal Elsayad



Diploma Course specification

Diseases of pets (Infectious and internal medicine course) (2021-2022)

1-Basic informations

Program under which this course is given: **diploma of pet animals**

Course duration: Teaching in one academic year, from October till the end of November of the second year; with a final examination at the end of the academic year.

Total teaching hours: 192: 4 hours per week

Lecture: 2 hrs per week

Practical: 2 hrs per week

Teaching staff:

Infectious diseases and Internal Medicine members

2. AIM OF THE COURSE:

- To provide students with knowledge and skills concerning bacterial, viral, parasitic, mycotic and prion caused diseases that affect pet animals.

3. INTENDED LEARNING OUTCOMES (I. L. Os.):

By the end of the course, students should be able to:

3-A: KNOWLEDGE and UNDERSTANDING:

A1- **Define** normal status in pet animals, and able to identify different diseases, which are deviation than normal anatomical contour and physiological functions that caused by infectious or noninfectious agents.

A2- **Determine** the most common diseases affecting pet animals, and the methods of transmission of such diseases.

A3- **Enumerate** the causes, pathogenesis, clinical symptoms the epidemiological features in each disease.

A4-**Determine** the appropriate diagnostic tools for the most important diseases..

A5 -**Cite** the treatment, prognosis for each disease and mention the methods of prevention and control of such diseases on individual animal and group levels.

A6- **Describe** appropriate management and control measures for these diseases.

A7-**List** the indications, contraindications, administration and precautions of the immunizations necessary for animals according to the national schedule and the epizootiology of the disease.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1-Interpret the most important symptoms and signs of pet diseases .



B2-Formulate appropriate management plans for individual patients presenting with the most common diseases. The management plan should indicate investigations (and how they would be interpreted) as well as treatment in addition to prophylaxis and control measures.

B3-Make decisions regarding common clinical situations using appropriate problem solving skills and relevant ethical principles.

B4-Interpret different laboratory tests, covering the most important diseases.

3-C: Practical and professional skills:

C1-Check vital signs in young and adult animals.

C2- Assess physical development according to standard and recognize abnormalities.

C3-Perform appropriate clinical assessments for pet animals.

C4-Recognize and institute appropriate initial management for pet animal emergencies.

C5-Construct a proper history for patient owners.

C6-Apply an adequate clinical examination for a patient animal and try to identify the suspected disease.

C7-Familiarized the different diagnostic tools to reach the correct diagnosis and differential diagnosis.

C8-Able to perform treatment, control as well as prophylactic measures to avoid disease occurrence in healthy ones in different animal species.

3-D: GENERAL SKILLS & ATTITUDE:

D1-Coach and work in group.

D2-Classify different duties.

D3-Utilize computer and internet skills..

D4-Develop the ethical behaviours between students and staff members as well as among the students themselves.

4. COURSE CONTENTS

TOPIC	Total hours	Hours for lectures	Hours for practical
Diseases of digestive system	18	18	-
Diseases of respiratory system	12	12	-
Diseases of urinary system and skin	12	12	-
Diseases of cardiovascular system and musculo-skeletal	12	12	-



Bacterial diseases of pets	18	18	-
Viral diseases of pets	18	18	-
Parasitic diseases of pets	6	6	-
Common terms	4	-	4
Anthelmintics	3	-	3
Diagnosis of helmenthiasis	3	-	3
Diagnosis of blood parasites	2	-	2
Diagnosis of some bacterial diseases	10	-	10
DIAGNOSISA OF MANGE AND RINGWORM	4	-	4
ANTIBIOTICS	2	-	2
vaccination	4	-	4
sampling	4	-	4
Clinical cases	12	-	12
Eximination of different body systems	20	-	20
Ultrasound tranaing	10	-	10
Clinical pathology of different body fluides	18	-	18

5. Teaching and learning method:

5.1. Lectures

Using data show, white board, brain storming

5.2. Practical and small group sessions:

Practical training

(Clinical demonstrations, practice of skills, and discussions)

- (a) Outpatients clinic in faculty hospital.
- (b) Field visits.

5.3 self learning

(Computer researches and faculty library visits to prepare essays and presentations)

- library researches
- internet researches
- discussion in the researches

5.4 audiovisual

Data show to display photos and videos

6- METHODS FOR DISABLED STUDENTS:

Activation of office hours

Discussions with them during practical sessions



7-student assessment:

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	At the end of 48 weeks	At the end of 48 weeks	At the end of 48 weeks
7.c grads	50	25	25

8 LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- **Text books:** available for students in the faculty library.
- International journals
- Overhead and slide projections and data show presentations used during teaching.

8-2: Recmended books:

- Text book of veterinary medicine
- Diseases of the livestock

8.3: web sites and journals

- WWW.PubMed.com
- International of veterinary information services (IVIS)
- www.Vet.net.com
- Veterinary microbiology

9- Course ILOS MATRIX

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Diseases of digestive system	A1-7	B1-4		D1-4
Diseases of respiratory system	A1-7	B1-4		D1-4
Diseases of urinary system and skin	A1-7	B1-4		D1-4
Diseases of cardiovascular system and musculo-skeletal	A1-7	B1-4		D1-4
Bacterial diseases of pets	A1-7	B1-4		D1-4



Viral diseases of pets	A1-7	B1-4		D1-4
Parasitic diseases of pets	A1-7	B1-4		D1-4
Common terms		B1-4	C5	D1-4
Anthelmintics		B1-4	C8	D1-4
Diagnosis of helmenthiasis		B1-4	C1-7	D1-4
Diagnosis of blood parasites		B1-4	C1-7	D1-4
Diagnosis of some bacterial diseases		B1-4	C1-7	D1-4
DIAGNOSISA OF MANGE AND RINGWORM		B1-4	C1-7	D1-4
ANTIBIOTICS		B1-4	C8	D1-4
vaccination		B1-4	C8	D1-4
sampling		B1-4	C1-7	D1-4
Clinical cases		B1-4	C1-9	D1-4
Eximination of different body systems		B1-4	C1-7	D1-4
Ultrasound tranaind		B1-4	C1-7	D1-4
Clinical pathology of different body fluids		B1-4	C1-7	D1-4

9- Evaluation ILOS MATRIX

TOOLS	I.L.O.S Evaluation				Marks allocated
	Knowledge	intellectual	practical	general	
Written examination	A1-7	B1-4		D3	50
Oral examination	A1-7	B1-4		D4	25
Practical examination		B1-4	C1-8	D1-2	25

Head of the department

Prof. Dr. Ismail Ibrahim

Course coordinator

Prof. Dr. Magdy H. Al-Gaabary

KAFR ELSHEIKH UNIVERSITY
FACULTY OF VETERINARY MEDICINE
DEPARTMENT OF PHARMACOLOGY

Course specification
(2021 / 2022)

1 - Basic Information:

Code number: -

Course title: Clinical pharmacology .

Program on which the course is given: Diploma of pet animals.

Total teaching hours: 96 hrs

Lectures: 48 hrs

Practical: 48 hrs.

2 - OVERALL AIMS OF THE COURSE:

The aim of this course is to provide the diploma students with up- to- date basic information and knowledge about the basic principles of clinical pharmacology and the pharmacological bases of drugs application in treatment of different diseased conditions affecting body systems and treatment of different infective agents in pet animals . Moreover, the drugs uses, side effects , drug residues interactions and contraindications will be discussed.

By the end of the course, students should be able to:

- 1- Illustrate the clinical features of some diseases of pet animals efficiently.
- 2- Recognize the specific drug conditions affecting different body systems and different infective agents in pet animals .
- 3- Carry out the specific techniques for clinical applications of different drugs in diseased conditions in pet animals.
- 4- Be aware with the symptoms associated with the administration of over dosage of most commonly used drugs in pet animals .

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1-** Recognize the basic principles of pharmacology, including drug absorption, distribution, metabolism and elimination with calculation of key pharmacokinetic parameters and understand



the usefulness of these parameters in rational drug therapy.

A2- Define the general principles of clinical pharmacology and difference from basic pharmacology and apply the principles of pharmacodynamics in clinical case scenarios.

A3- Classify commonly used veterinary drugs in pet animals using a systems-based approach and different infective agents.

A4- Explain the characteristics of systems-based classes of drugs and anti infective agents ,including relevant chemistry, source, action , mechanism and site of action on different organs and tissues. , absorption and elimination, pharmaceutical forms , routes of administration, toxicity, adverse or side effects, contraindications, drug interactions , drugs residues and therapeutic uses.

A5- Illustrate the clinical features of some diseases in pet animals efficiently .

A6- Identify the policy of clinical application of these drugs in diseased conditions in pet animals .

A7- Describe the importance of interspecies difference and physiological status on drugs application in pet animals.

A8- Explain fully the pharmacological bases for treatment of different diseased conditions in pet animals .

A9- List the importance of environmental and human health implications of drugs in pet animals .

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- Analyze, summarize and evaluate information about drugs (pharmacological actions , uses and side effects) in professional manner.

B2- Investigate the principles of pharmacology and knowledge of specific drugs to make rational drug therapy decisions.

B3- Choose and administer different drugs according to specific diseased conditions in professional way.

B4- Evaluate and solve problems related to drugs administration such as drugs interactions, side effects , residues, toxicities and application by himself.

B5- Inspire appropriate concepts in arriving at a critical assessment by himself.

B6- Analyze, evaluate and interpret clinical cases.

B7- Select the appropriate medical intervention and different methods for the management of emergencies in pet animals.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1- Distinguish minor illnesses from those requiring prompt medical intervention.

C2- Apply and utilize the knowledge of physiology and pharmacology in the proper selection and use of drug in various disease conditions, and in predicting the side effects of drug classes.

C3- Carry out the specific techniques for clinical applications of different drugs in diseased conditions in pet animals.



- C4-** Advise the owner of animal on the safe, rational and effective use of drugs.
C5- Evaluate the different side effects associated with the administration of drugs in clinical situations in professional way.
C6- Solve health care problems with a multidisciplinary and integrative approach.
C7- Differentiate between different drugs used at the same diseased conditions and their possible interactions between different lines of treatments.

3- D: GENERAL and transferable SKILLS:

By the end of studying the course, the graduate should be able to:

- D1-** Perform group working , good management and problem solving ability.
D2- Conduct good communications.
D3-Use new technology and has the ability of self learning.
D4- Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

SNO.	TOPIC	Total hours	Hours for lecture	Hours for practical
1	Introduction of pharmacology Pharmacokinetics , pharmacodynamics and interactions.	3	3	-
2	The general principles of clinical pharmacology.	3	3	-
3	Drugs affecting Autonomic nervous system.	4	4	-
4	Drugs affecting central nervous system.	4	4	-
5	Autacoids and anti-inflammatory drugs.	2	2	-
6	Drugs affecting digestive, urinary and reproductive systems .	4	4	-
7	Drugs affecting respiratory and cardiovascular systems .	4	4	-
8	Drugs affecting skin and eye.	2	2	-
9	Antimicrobial drugs .	6	6	-
10	Anthelmintics .	6	6	-
11	Antiprotozoal agents .	6	6	-
12	Drugs affecting metabolism and metabolic disorders.	2	2	-
13	The baselines of drug selection	2	2	-



14	Clinical applications of drugs affecting Autonomic nervous system ,side effects and interactions	4	-	4
15	Clinical applications of drugs affecting central nervous system ,side effects and interactions .	4	-	4
16	Clinical applications of autacoids and anti-inflammatory drugs,side effects and interactions .	4	-	4
17	Clinical applications of drugs affecting digestive, urinary and reproductive systems ,side effects and interactions .	6	-	6
18	Clinical applications of drugs affecting respiratory and cardiovascular systems ,side effects and interactions .	4	-	4
19	Clinical applications of drugs affecting skin and eye,side effects and interactions .	2	-	2
20	Clinical applications of antimicrobial drugs ,side effects and interactions .	8	-	8
21	Clinical applications of anthelmintics ,side effects and interactions .	6	-	6
22	Clinical applications of antiprotozoal agents ,side effects and interactions .	6	-	6
23	Clinical applications drugs affecting metabolisms ,side effects and interactions .	4	-	4
	Total	96	48	48

5- TEACHING & LEARNING METHODS:

***Lectures:**

Using data show.

***Practical and small group sessions:**

Practical demonstrations, practice of skills and discussions.

*** Self learning:**

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.

- **Audiovisual:**



Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

No disabled students until now, but if present the staff members in the department plan to held several meetings with the students to face any difficulties that meet the students.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	At the end of academic year	At the end of academic year	Two weeks before the end of the academic year
<u>7.c grads</u>	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: Basic materials:

- Text books in Pharmacology available in library of the faculty.
- Overhead projections, Microscopes, , slides and computer presentations used during teaching.

8-2: Recmonded books:

- **Bertram G. Katzung (2006):** Basic & Clinical Pharmacology, 10th Edition
- **Joel G. Hardman, Lee E. Limbird and Alfred G. Gilman (2001):** Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 10th Edition.
- **G. C. Brander, D. M. Pugh, R. J. Bywater and W. L. Jenkins (1991):** Veterinary applied pharmacology and therapeutics , 5th Edition.
- **Merck , S. and Dohme , C. (2005) :** The Merck Veterinary Manual, 9th Edition.

8-3: Suggested books:

- **Heinz Lüllmann, M. D.,Klaus Mohr, M. D.,Albrecht Ziegler, Ph.D.,Detlef and Bieger, M. D. (2005) :** Color Atlas of Pharmacology , 3rd edition .
- **Carl Binz (2008):** Lectures on pharmacology for practitioners and students ,Volume: v.2.
- **P. Venkatesan and M. J. Wood (1998):** General principles of antimicrobial therapy , pp. 63-78.

8.4: Web sites and jouranlsand so on:



- Journal of pharmacology and experimental therapeutics.
- British Journal of pharmacology.
- European Journal of Pharmacology.
- Pharmacology, Biochemistry and Behavior.
- <http://www.vetmed.wsu.edu/depts.-vcpl/>
- <http://www.cc.nih.gov/>
- <http://www.acvcp.org/>
- <http://www.clinicalpharmacology.com/>
- <http://www.vetnet.net/>
- <http://www.summitpk.com/pksolutions.htm>
- <http://www.analyticon.co.uk/pkpdpage.htm>
- <http://www.ncbi.nlm.nih.gov>

9.1. Course content ILOs Matrix:

TOPIC	K.U (A)	LS (B)	P.P.S (C)	G.T.S (D)
Introduction of pharmacology Pharmacokinetics , pharmacodynamics and interactions.	A1	B1 to B7	-	D1 to D4
The general principles of clinical pharmacology.	A2	B1 to B7	-	D1 to D4
Drugs affecting Autonomic nervous system.	A3, to A9	B1 to B7	-	D1 to D4
Drugs affecting central nervous system.	A3, to A9	B1 to B7	-	
Autacoids and anti- inflammatory drugs.	A3, to A9	B1 to B7	-	D1 to D4
Drugs affecting digestive, urinary and reproductive systems .	A3, to A9	B1 to B7	-	D1 to D4
Drugs affecting respiratory and cardiovascular systems .	A3, to A9	B1 to B7	-	D1 to D4



Drugs affecting skin and eye.	A3, to A9	B1 to B7	-	D1 to D4
Antimicrobial drugs .	A3, to A9	B1 to B7	-	D1 to D4
Anthelmintics .	A3, to A9	B1 to B7	-	D1 to D4
Antiprotozoal agents .	A3, to A9	B1 to B7	-	D1 to D4
Drugs affecting metabolism and metabolic disorders.	A3, to A9	B1 to B7	-	D1 to D4
The baselines of drug selection.	A6- A9	B1 to B7	-	D1 to D4
Clinical applications of drugs affecting Autonomic nervous system ,side effects and interactions	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of drugs affecting central nervous system ,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of autacoids and anti-inflammatory drugs,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of drugs affecting digestive, urinary and reproductive systems ,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of drugs affecting respiratory and cardiovascular systems ,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of drugs affecting skin and eye,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of antimicrobial drugs ,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of anthelmintics ,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications of antiprotozoal agents ,side effects and interactions .	-	B1 to B7	C1 to C7	D1 to D4
Clinical applications drugs	-	B1 to B7	C1 to C7	D1 to D4



affecting metabolisms ,side effects and interactions .

9.2. Assessment ILOs Matrix:

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectual	Practical	general	
Written examination	A1, A2, A3., A4, A5, A6,A7, A8,A9	B1, B2, B3, B4, B5, B6, B7	-	D3,D4	50
Oral examination	A1, A2, A3., A4, A5, A6, A7, A8,A9	B1, B2, B3, B4, B5, B6, B7	-	D4	25
Practical examination	-	B1, B2, B3, B4, B5, B6, B7	C1, C2, C3 C4,C5, C6,C7	D1,D2,	25

Course Coordinator:

Dr. Amira Shehata Alam El Deen

Head of Department:

Prof. Dr. Aboelnasr Zahra



KAFR EL-SHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF Poultry Diseases

Course specification

(2021/2022)

1. Basic Informations:

Code number:

Course title: Diseases of psittacine birds (Pet birds)

Academic year or level: Pet animals diploma

Total teaching hours: 144 hrs

Lectures: 48 hrs

Practical: 96 hrs

2. Overall AIM OF THE COURSE:

To provide student with basic knowledge and skills concerning the epidemiology, diagnosis prevention and control of diseases of petbirds.

3. INTENDED LEARNING OUTCOMES (I. L. Os.):

3. A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1- **List** the different techniques used in isolation of the etiology of different

diseases of pet birds.

A2- **Define** the modern techniques used in identification of the etiology of wild and

migratory bird diseases

A3- **Describe** the diagnosis and differential diagnosis of different pet birds

diseases.

A4- **Recognize** the gross lesions in different petbird diseases..

A5- **Define** the effective vaccines used for prevention and control of pet bird diseases.

3. B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- **Create** the ability to make isolation and identification of the etiology of different viral diseases of poultry.

B2- **select** the diagnosis of different viral diseases of poultry.



B3- **Construct** the effective vaccine used for prevention and control of viral diseases of poultry.

B4- **Prescribe** the effective drug used for treatment and control of control of wild and migratory bird diseases.

3. C: Practical and professional skills:

By the end of the course, students should be able to:

C1. Make isolation of the causative microorganisms and their serological identification.

C2. **Detect** the clinical signs and postmortem lesions of different diseases of petbirds.

C3. Apply laboratory and field tests for diagnosis of pet bird diseases.

C4. Perform **Field application of vaccines of** pet bird diseases.

C5. Apply **Treatment and control of** pet bird diseases..

3. D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Coach and work in groups.

D2-Classify different duties

D3- Utilize computer and internet skills.

D4-Develop the ethical behaviors between students and staff members as well as among the students themselves

4. COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Bacterial Diseases of pet birds	36	12	24
Viral Diseases of pet birds	36	12	24
Mycotic Diseases of pet birds	36	12	24
Parasitic Diseases of pet birds	36	12	24



Total	144	48	96
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5:- TEACHING & LEARNING METHODS:

5.1:- Lectures

(using data show and white board, brain storming)

5.2:- Practical and small group sessions:

1: Practical training

(Practical demonstrations, practice of skills, and discussions)

5.3:- self learning

(Computer researches and faculty library visits to prepare essays and presentations)

- Library researches.
- Internet researches.
- Discussion in the researches.
- Histological Drawings.

5.4:- Audiovisual

Television circle in the practical laboratory

6. METHODS FOR DISABLED STUDENTS:-

- Activation of office hours.
- Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	At the end of 48 weeks	At the end of 48 weeks	At the end of 48weeks
<u>7.c grads</u>	50	20	30

8. LEARNING AND REFERENCE MATERIALS:.



8-A: SUGGESTED MATERIALS:

CD-ROM containing topics and presentations in poultry diseases (to be available to students)

Calnek, B. w. (1998): Diseases of Poultry, Tenth edition.

Saif, Y. M. (2008): Poultry Diseases. U. S. A.

8.B: web sites and jounanls

- WWW.PubMed.com
- International of veterinary information services (IVIS)
- www.Vet.net.com

Intended learning outcomes of each topic

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Bacterial Diseases of pet birds	A1-A2-A3-A4-A5	B1-B2-B3-B4	C1-C3-C4-C5	D1-D2-D4
Viral Diseases of pet birds	A1-A2-A3-A4-A5	B1-B2-B3-B4	C1-C3-C4-C5	D1-D2-D3-D4
Mycotic Diseases of pet birds	A1-A2-A3-A4-A5	B1-B2-B3-B4	C1-C3-C4-C5	D1-D2-D3-D4
Parasitic Diseases of pet birds	A1-A2-A3-A4-A5	B1-B2-B3-B4	C1-C3-C4-C5	D1-D2-D3-D4

Evaluation Intended learning outcomes

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	general	
Written examination	A1-A2-A3-A5	B1-B2-B3		D3,D4	50



Oral examination	A1-A2-A3-A5	B1-B2-B3		D4	20
Practical examination		B3	C1-C2-C3-C4-C5	D1,D2	30

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Course coordinator:

Prof Dr. Moshira A. El-Abasy

Head of department of Poultry diseases

Prof Dr. Moshira A. El-Abasy



KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF **Hygiene and Preventive Medicine**

Course specification

(2021 / 2022)

1 - Basic Information:

Course title: pet Animal and ornamental fowl nutrition and Management

Program on which the course is given : *Diploma of pet animals*

Total teaching hours: 96 hrs

Lectures: 48

Practical: 48

2 - OVERALL AIMS OF THE COURSE:

To provide student with basic knowledge and skills concerning:

- To support achievement of basic knowledge of normal and abnormal pet animal nutrition and management to improve their productivity.
- To provide students with an appropriate background covering the common and important nutrition and management for each pet animals.
- To enable the students with an appropriate skills for solving the pet animal problems as a method for decreasing the stress and increasing the animal productivity.
- To provide the students with some knowledge which help them to avoid the animal's danger.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1 List normal and abnormal nutritional and managemental problems in different **pet** animal species.

A2 Determine the most suitable method of nutrition and management for each **pet** animal species at different ages.

A3 Recognise the causes and Describe appropriate nutritional and managemental control for the most important animal problems.

A4 Define the role of nutrition and management to avoid some **pet** animal diseases.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1 Interpret the most important symptoms and signs of healthy and sound animals.

B2 Decide the nutritional and managemental plans for each **pet** animal.

B3 Solve the common clinical problems associated with animal nutrition and management.



B4 Design the control method for any vicious diseased animal admit in the clinic.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1 Collect vital signs for soundness in young and adult animals.
- C2 Perform the right methods used for securing and casting of animals during difficult examination.
- C3 Employ a proper nutrition and management for any diseased animal.
- C4 Apply an adequate clinical examination for diseased animal with care.
- C5 Correct some animal nutritional deficiency.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1 Collect any data about **pet** animals in an organized and informative manner.
- D2 Communicate effectively with farm's owners using appropriate communication skills.
- D3 Present the important nutritional and managerial practices that increase animal's welfare and its productivity.
- D4 Work in a teamwork and under pressure.

4 - COURSE CONTENTS:

TOPIC	Hours for lecture	Hours for practical
General introduction	12	-
pet animal and ornamental fowl management	18	-
pet animal and ornamental fowl nutrition	18	-
Restraint of pet animals	-	9
Grooming of pet animals	-	9
Washing of pet animals	-	9
Bedding and clothing of pet animals	-	9
pet animal and ornamental fowl nutritional deficiency	-	12
Total	48	48

5- TEACHING & LEARNING METHODS:

***Lectures**

(using data show, white board, overhead projector and brain storming)

***Practical and small group sessions:**

1: Practical training.

(Practical demonstrations, practice of skills, and discussions)

*** Self learning**



Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- Preparation of posters
- Preparation of scientific reports.

* **Audiovisual**

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written exam	Oral exam	Practical exam
7.b time	At the end of course 48 wk	At the end of course 48 wk	Before the end of course 48 wk
7.c Marks	25	10	15

8. LEARNING AND REFERENCE MATERIALS:

8-1: Recmonded books:

8.1. a- Farm Animal Behavior. Frazer. D (2012)

8.1.b- Poultry Behavior and Welfare. Appleby et al. (2010)

8.2: web sites and jouranlsand so on

- WWW.PubMed.com
- Intrnational of veterinary information services (IVIS)
- www.Vet.net.com
- Journal of Hormone and Behavior
- Journal of applied Animal Ethology

Intended learning out comes of each topic

TOPIC	K.U (a)	LS (b)	P.P.S (c)	G.T.S (d)
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General introduction	A1-A4	B1-B2-B4	-	D1-D2-D3D4
pet animal and ornamental fowl management	A1-A2-A3- A4	B1-B2-B4	-	D1-D2-D3-D4
pet animal and ornamental fowl nutrition	A1-A2-A3- A4	B1- B3-B4	-	D1-D2-D3-D4
Restraint of pet animals	-	B1- B3-B4	-	D1-D2-D3-D4
Grooming of pet animals	-	B1-B2-B3-B4	-	D1-D2-D3-D4
Washing of pet animals	-	B1-B2-B3-B4	C1-C2-C3-C4-C5	D1-D2-D3-D4
Bedding and clothing of pet animals	-	B1-B2-B3-B4	C1-C2-C3-C4-C5	D1-D2-D3-D4
pet animal and ornamental fowl nutrional defeicincy	-	B1-B2-B3-B4	C1-C2-C3-C4-C5	D1-D2-D3-D4

Evaluation Intended learning out comes matrix

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	general	
Written examination	A1.A2.A3.A4	B1-B2-B3-B4	-	-	25
Oral examination	A1.A2.A3.A4	B1.B2.B3.B4	-	D2-D3	10
Practical examination	-	B2	C1.C2.C3. C4.C5	D1,D4	15

Course Coordinator:
Prof. Dr. Tarek Balabel

Head of Department:
Prof. Dr. Tarek Balabel



Kafrelsheikh University
Faculty of Veterinary Medicine



Kafrelsheikh University

Faculty of Veterinary Medicine

Department of Pharmacology

Program Specification for Master Degree

(2021 - 2022)

Program Title:

Master of The Veterinary Science

(Pharmacology and Pharmacy)



A- Administrative information:

- 1- **Awarding Body:** Kafrelsheikh University
- 2- **Teaching Body:** Faculty of Veterinary Medicine
- 3- **Department responsible:** pharmacology
- 4- **Program Title:** veterinary pharmacology and pharmacy
- 5- **Final award:** Diploma Degree
- 6- **Registration period:** one year
- 7- **Program Co- coordinator:** Prof.Dr. Abou elnaser zahraa

B- Professional Information

1- Programme Aims

- 2- Provides graduates the opportunity to develop professional skills in the field of Veterinary Pharmacology and Medicinal Preparations.
- 3- Supplies the graduates with the up-to-date knowledge and technological applications in the field of Veterinary Pharmacology and Medicinal Preparations.
- 4- Diploma of general grade at least “Good” and at least grade “Very Good” in specialization allows the candidate to admit for the Master program of Veterinary Medical Sciences (Veterinary Pharmacology).

2- Academic standards:

Academic reference standards (ARS) adopted by the faculty committee No 1(14/9/2014)

3- Graduate attributes:

Upon successful completion of the program, the graduate has the ability for:

- 1) Application of the gained specific knowledge in laboratory determination of drugs action, mechanism of action and drugs Pharmacokinetics.
- 2) Identification of problems accompanied with drug administration and suggestion of accurate methods to overcome such problems.
- 3) Mastering skills in veterinary pharmacology, and using appropriate biotechnological means in the laboratory determination of drugs action, mechanism of action and drugs Pharmacokinetics.
- 4) Effective communication skills in professional veterinary and laboratory



- practice and leading professional work team in Pharmacology laboratory.
- 5) Decision making according to available data collected from diseased animals and performing laboratory investigations.
 - 6) Effective use of the available resources to be quick, accurate and economic.
 - 7) Awareness with his role in society development and community preservation through combating diseases by using drugs.
 - 8) Reflecting the commitment to act with integrity, credibility, and the rules of using drugs for controlling veterinary problems.
 - 9) Realizing the importance of self and life-long learning and progress.

4-Intended Learning Outcomes (ILOs)

a- Knowledge and Understanding:

By the end of this program the graduate should be able to:

- a.1. Define basic principles and practice of Veterinary Pharmacology and Medicinal Preparations and related sciences including Physiology, and Forensic medicine and toxicology.
- a.2. Realize the principles of laboratory safety (laboratory hazards and protective measures) and regulations.
- a.3. Apply efficiently the standards of quality standards in the Veterinary Pharmacology Laboratory.
- a.4. Recognize the influence of practicing laboratory diagnosis on surrounding environment and human and animal health

b- Intellectual Skills

By the end of this program the graduate should be able to:

- b.1. Determine and analyze the professional problems in the field of Veterinary Pharmacology and Medicinal Preparations and arrange them according to priorities.
- b.2. Solve professional problems in Veterinary Pharmacology and Medicinal Preparations field using the available facilities and information.
- b.3. Read analytically researches and scientific topics in the field of Veterinary Pharmacology and Medicinal Preparations.
- b.4. Assess risks of professional practice in the field of Veterinary Pharmacology and Medicinal Preparations.
- b.5. Make professional decisions in a variety of professional contexts with the desire to meet new challenges.

c- Professional and Practical Skills



By the end of this program the graduate should be able to:

- c.1.** Master basic and professional skills in the field of Veterinary Pharmacology and Medicinal Preparations.
- c.2.** Fulfill laboratory techniques for in the professional field.
- c.3.** Write, conclude and evaluate a professional and conclusive report.

d- General and Transferable Skills

By the end of this program, the graduate should be able to:

- d.1.** Communicate efficiently with teaching staff, colleagues and the community
- d.2.** Utilize information technology in scientific research and publications.
- d.3.** Update information and knowledge and exchange it with staff and colleagues.
- d.4.** Identify and use different sources of information and knowledge in clinical pathology and other related topics.
- d.5.** Respect the importance of team work and do good control of time.
- d.6.** Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team.
- d.7.** Use the tools important for self and continuous learning.

program Structure :

a: duration: one year

b: program courses:

Course Title	No. of hours /week		
	Lecture	Lab.	Total
pharmacology	2	2	4
Biochemistry	1	1	2
Physiology	1	2	3
Veterinary toxicology	1	2	3



Veterinary pharmacies	1	1	2
Experimental pathology	1	1	2
Total	7	9	16

6-Teaching and Learning Methods:

The program features a variety of teaching approaches for different intended learning objectives, including lectures, practical and lab sessions, and seminars.

7- Student assessment:

The program courses depend on different assessment ways:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills

Assessment of program intended learning outcomes

Tool or method	ILOs			
	K & U (a)	I.S (b)	P.P (c)	G.T (d)
Written	1-4	1,2,3,5		1-7
Oral	1-4	1,3,4		1-7
Practical		1,2	1-3	1-7

8-Marking scale as follow:-



Grade		Percentage
Excellent		> 90
Very good		>80
Good		>70
Pass		>60
Fail	weak	45 to less than 60
	very weak	Less than 45

9-Evaluation of program outcomes

Code	Evaluator	Tools	Sample
1	Postgraduate students	Questioners	20%
2	Stakeholder	Questioners & Open discussion	10
3	Alumni	Questioners	15
4	External examiners	Report	1
5	External evaluators	Report	1

10. Program Admission Requirements:

Applicant must normally satisfy the Faculty of Veterinary Medicine University of kafrelsheikh general entrance and requirement.

- The applicant must have regular attendance in his courses according to the schedule of the faculty.

11. Regulations for progression of program



- a) Registration period for the Diploma in veterinary medicine sciences is one year after the approval date by the Faculty council, and it should not exceed a period of two years.
- b) The student should conduct the courses proposed by both department council and approved by postgraduate and research committee and faculty council (article 32) in regulation law list and the student will entitled to apply for the exam. only after meeting attendance rate for each courses.
- c) The student should pass written, practical and oral exams successfully in all courses, and the grade will be estimated according to in regulation law list.
- d) The Faculty council has the right to deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- e) Registration will be during September of each year.
- f) Failure in or depriving from entering one or more course did not requires reexamination of successful passed courses.

12-Examination Regulations

- a- Time of written exam, 3 hours for each course that has 3 hours or more for lecture / practical /week. **If has less than 3 hours/week, the time of exam, is 2 hours only.**
- b- The final degree of each course which has 3 hours (lecture and practical) per week is **100 and less than 3 hours is 50 degrees and divided into 50% for written exam, and 50% for practical and oral exam.**

Program Co-coordinator:

Head of Department

Pro.Dr. Abou elnaser zahra

Prof. Dr. kamal elshazly



Matching program ILOs with ARS - Matrix

Prog ILOs	ARS																	
	K&U (a)				I.S. (b)					P.P. (c)		G.T. (d)						
	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7
K&U	1	2	3	4														
I.S.					1	2	3	4	5									
P.P.										1	3							
										2								
G.T.												1	2	3	4	5	6	7



Program Specification Matrix

Diploma in Veterinary Pharmacology and Pharmacy

Courses Name	Total Contact hours/ course	No. of hours / week			K.U (a)				I.S (b)					P.P (c)			G.T (d)								
		Lect.	Lab.	Total	1	2	3	4	1	2	3	4	5	1	2	3	1	2	3	4	5	6	7		
pharmacology	192	2	2	4	x		x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	
Biochemistry	96	1	1	2	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	
Physiology	144	1	2	3	x	x	x		x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	
Veterinary toxicology	144	1	2	3	x				x		x	x			x	x	x	x	x			x	x	x	
Veterinary pharmacies	96	1	1	2	x	x		x				x	x		x	x	x	x	x	x	x	x	x	x	
Experimental pathology	96	1	1	2	x	x		x				x	x		x	x	x	x	x	x	x	x	x	x	
Total	768	7	9	16																					

ARS for Diploma in Veterinary Pharmacology and Pharmacy

Graduate attributes

At the end of the program, graduate must be able to::

- 1) Application of the gained specific knowledge in laboratory determination of drugs action, mechanism of action and drugs Pharmacokinetics.
- 2) Identification of problems accompanied with drug administration and suggestion of accurate methods to overcome such problems.
- 3) Mastering skills in veterinary pharmacology and using appropriate biotechnological means in the laboratory determination of drugs action, mechanism of action and drugs Pharmacokinetics.
- 4) Effective communication skills in professional veterinary and laboratory practice and leading professional work team in Pharmacology laboratory.
- 5) Decision making according to available data collected from diseased animals and performing laboratory investigations.
- 6) Effective use of the available resources to be quick, accurate and economic.
- 7) Awareness with his role in society development and community preservation through combating diseases by using drugs.
- 8) Reflecting the commitment to act with integrity, credibility, and the rules of using drugs for controlling veterinary problems.
- 9) Realizing the importance of self and life-long learning and progress.

A) Knowledge and understanding

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Basics principles and practice of veterinary pharmacology and related sciences including pathology, physiology, biochemistry, and toxicology.	Basics, theories and specific knowledge in educational field and sciences related to professional practice
2)	Principles of laboratory safety and regulations (laboratory hazards and protective measures) in Pharmacology laboratory.	Ethical and legal principles related to professional practice
3)	Application of quality standards in the veterinary pharmacology laboratory.	Basics and principles of quality assurance in professional practice in the field of specialization
4)	Basis of diagnostic laboratory hazards on surrounding environment and methods to maintain clean environment	Impact of professional practice on environment and work to preserve and maintain the environment

B) Intellectual skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Identification and analysis of problems in veterinary pharmacology and arranging them according to priorities	Determination and analysis of professional problems in the field of specialization and arranging them according to priorities
2)	Solving drug administration problems including drugs side effects, interactions and drug residues.	Solving professional problems in specialization field
3)	Analytical reading of researches and scientific topics in the field of veterinary pharmacology.	Analytical reading of researches and scientific topics in the field of specialization
4)	Designing a Risk Assessment Form and performing a Risk Assessment for an item within veterinary pharmacology laboratory.	Risk assessment in professional practice.
5)	Using appropriate intellectual strategy and evidence based decisions to deal with drugs administration problems and make decisions	Professional decision making using available information

C) Professional and practical skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Performing the basic practical skills in veterinary pharmacology lab.	Applying professional skills in the field of specialization
2)	Writing professional laboratory reports in the field of pharmacology and therapeutics	Writing professional reports

D) General and transferable skill

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Effective communication with teaching staff, colleagues and the community	Effective communication
2)	Utilizing information technology in scientific research and publications.	Utilizing information technology to serve development of professional practice.

3)	Updating information and knowledge and exchange it with staff and colleagues.	Self-assessment and determination of personal educational needs.
4)	Identifying and using different sources of information and knowledge in clinical pathology and other related topics	Using different resources to obtain knowledge and information.
5)	Respecting the importance of team work and do good control of time.	Working in team and efficient time management.
6)	Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team	Leading a team in familiar professional contexts.
7)	Using the tools important for self and continuous learning	Self and continuous learning

أولاً: برامج دبلومه الدراسات العليا

١- مواصفات الخريج

خريج برنامج دبلومه الدراسات العليا في أي تخصص يجب أن يكون قادراً على:

١. تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
٢. تحديد المشكلات المهنية واقتراح حلولاً لها
٣. إتقان المهارات المهنية واستخدام الوسائل التكنولوجية المناسبة في ممارسته المهنية
٤. التواصل وقيادة فرق العمل من خلال العمل المهني المنظومي
٥. اتخاذ القرار في ضوء المعلومات المتاحة
٦. توظيف الموارد المتاحة بكفاءة
٧. الوعي بدوره في تنمية المجتمع والحفاظ على البيئة
٨. التصرف بما يعكس الالتزام بالنزاهة والمصداقية وقواعد المهنة وتقبل المسائلة والمحاسبة
٩. إدراك ضرورة تنمية ذاته والانخراط في التعلم المستمر

٢- المعايير القياسية العامة

١ المعرفة والفهم. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على فهم و
استيعاب كل من:

- أ- النظريات والأساسيات والمعارف المتخصصة في مجال التعلم وكذا العلوم ذات العلاقة بممارسته المهنية
- ب- المبادئ الأخلاقية والقانونية للممارسة المهنية في مجال التخصص
- ج- مبادئ وأساسيات الجودة في الممارسة المهنية في مجال التخصص
- د- تأثير ممارسة المهنية على البيئة والعمل على الحفاظ على البيئة وصيانتها

٢ المهارات الذهنية. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على:

- أ- تحديد وتحليل المشاكل في مجال التخصص وترتيبها وفقاً لأولوياتها
- ب- حل المشاكل المتخصصة في مجال مهنته
- ج- القراءة التحليلية للأبحاث والمواضيع ذات العلاقة بالتخصص
- د- تقييم المخاطر في الممارسات المهنية

هـ - اتخاذ القرارات المهنية في ضوء المعلومات المتاحة

٣ المهارات المهنية. ٢

بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:

أ - تطبيق المهارات المهنية في مجال التخصص

ب - كتابة التقارير المهنية

٤ المهارات العامة و المنقولة. ٢

بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:

أ - التواصل الفعال بأنواعه المختلفة

ب - استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية

ج - التقييم الذاتي و تحديد احتياجاته التعليميه الشخصية

د - استخدام المصادر المختلفة للحصول على المعلومات و المعارف

هـ - العمل في فريق وإدارة الوقت

و - قيادة فريق في سياقات مهنية مألوفة

ز - التعلم الذاتي و المستمر

Course specification (2021 / 2022)

1 - Basic Information:

Code number:

Course title: Experimental Pathology

Academic Year: Veterinary Pharmacology and pharmacy diploma program

Total teaching hours: 96 hrs

Lectures: 48hrs

Practical: 48 hrs

2 - OVERALL AIMS OF THE COURSE:

Upon successful completion of the course, the student will be able to:

- Be aware with the different models of toxicities within different experimental animal species.
- Enable the student to identify the microscopic and ultrastructural basis of different drugs related toxicities within different organs as well as infectious agent related diseases.

• 3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1- Discuss the basics of pathology including gross and microscopical alterations in experimental animals.

A2- Discuss the pathogenesis of diseases caused by different causative agents in lab animals.

A3- Express the scientific progress in the field of experimental Pathology.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- Differentiate the histopathological lesions induced in experimental animals by infectious diseases from those caused by metabolic disorders or chemicals.

B2- Manage problems of diagnosis of pathological affection even in cases associated with rare data.

B3- Relate different knowledge with the microscopical findings to get appropriate interpretations of pathological cases.

B4- Characterize risks during necropsy of experimental animals dying from infectious diseases.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1- Practice PM examination, sampling, and report writing and design an experiment for pathological investigations.

C2- Examine the lesions in experimental animals both grossly and microscopically to reach appropriate diagnosis.

C3- Apply essential laboratory skills that underpin techniques associated with sampling, processing, staining and microscopical examination.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Coach and work in groups.

D2-Classify different duties

D3- Utilize computer and internet skills.

D4-Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

	Total hours	Lecture	practical
Basics of pathology of experimental animals (rats, mice, hamster, guinea pig and rabbits)	3	3	-
Experimental pathology strategy in lab animals	12	6	6
Experimental animal genetics and genomics species, strains, and substrains	12	6	6
Immunologic idiosyncracies of experimental animals	12	6	6
Infections of laboratory animals: effects on research	2	2	-
infections in experimental animals	26	10	16
Nutritional and metabolic disorders in experimental animals	4	4	-
Behavioral disorders in experimental animals	6	-	6
Environment-related disease in experimental animals	6	3	3
Aging, degenerative, and miscellaneous disorders in experimental animals	3	3	-
Neoplasms in experimental animals	10	5	5
Total	96	48	48

5- TEACHING & LEARNING METHODS:

***Lectures:**

using data show, white board and over head projector.

***Practical and small group sessions:**

Practical training:Practical demonstrations, practice of skills, and discussions.

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

Histopathological Drawings.

Library researches.

Internet researches.

Discussion in the researches.

Preparation of scientific reports.

*** Audiovisual**

Television circle in the practical laboratory.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	One examination at the end of the academic Year	One examination at the end of the academic Year	One examination at the end of the academic Year
7.c grads	25	10	15

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Practical Department Notes: available for students to purchase from the department.*
- Microscopes, slides, projector slides, Data show.

8-2: Recmended books:

- Pathology of Laboratory Rodents and Rabbits. Dean H. Percy, Stephen W. Barthold. Wiley-Blackwell; 3 edition (2007).*

8-3: SUGGESTED books:

- Robbins & Cotran Pathologic Basis of Disease. Vinay Kumar, Nelso Fausto, Abul Abbas. Saunders; 7 edition, USA, 2004*
- Veterinary pathology Textbook. (By Thomas Carlyle Jones, Ronald Duncan Hunt and Norval W. King, - Wiley-Blackwell, U.S.A., 1997).*

8.4: web sites and jouranlsand so on

- Archive of Pathology*
- Veterinary RecordIVIS*
- PubMed*
- Science direct*
- IVIS*
- Environmental Protection Agency (EPA)*
- Food and Drug Administration (FDA)*
- EPA: Integrated Risk Information System (IRIS)*
- Egyptian Journal of Comparative Pathology and Clinical Pathology*
- Pathologia Veterinaria*
- American Journal of Pathology*
- Journal of Pathology and Bacteriology*

Intended learning out comes of each topic

TOPIC	K.U (a)	LS (b)	P.P.S (c)	G.T.S (d)
Basics of pathology of experimental animals (rats, mice, hamster, guinea pig and rabbits)	A3	B4	-	D1,D2,D3,D4

Experimental pathology strategy in lab animals	A1	B1	C3	D1,D2,D3,D4
Experimental animal genetics and genomics species, strains, and substrains	A2,A3	B2,B4	C1	D1,D2,D3,D4
Immunologic idiosyncracies of experimental animals	A3	B1,B2,B3	C2,C3	D1,D2,D3,D4
Infections of laboratory animals: effects on research	A2	B3	-	D1,D2,D3,D4
infections in experimental animals	A1,A2 A3	B2,B3,B4	C2,C3	D1,D2,D3,D4
Nutritional and metabolic disorders in experimental animals	A1,A2, A3	B1,B2,B3,B4	-	D1,D2,D3,D4
Behavioral disorders in experimental animals	-	B2,B4	C2	D1,D2,D3,D4
Environment-related disease in experimental animals	A2	B4	C1,2	D1,D2,D3,D4
Aging, degenerative, and miscellaneous disorders in experimental animals	A3	B2	-	D1,D2,D3,D4
Neoplasms in experimental animals	A1,A2	B1	C1	D1,D2,D3,D4
Environment-related disease in experimental animals	A1	B3	C2	D1,D2,D3,D4
Aging, degenerative, and miscellaneous disorders in experimental animals	A2	B2	-	D1,D2,D3,D4
Neoplasms in experimental animals	A1,A2, A3	B1,B2,B3,B4	C1,C2,C3	D1,D2,D3,D4

Evaluation Intended learning out comes

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectua l	Practical	general	
Written examination	A1,A2,A3	B1,B2,B3		D3	25
Oral examination	A1,A2,A3	B1,B2,B3,B4		D4	10
Practical examination		B3	C1,C2,C3	D1,D2,	15

Course Coordinator:
Dr. Walied Sobhi Kotb

Head of Department:
Prof. Dr. Ahmed Elsawak

Course specification
(2021 / 2022)

1 - Basic Information:

Code number: -

Course title: Veterinary Pharmacology .

Program on which the course is given: Diploma of pharmacology and pharmacy.

Total teaching hours: 192 hrs

Lectures: 96 hrs

Practical: 96 hrs.

2 - OVERALL AIMS OF THE COURSE:

The aim of this course is to provide the diploma students with up- to- date basic information and knowledge about the uses of veterinary drugs in the Egyptian field, and the uses of specific drugs for treatment of diseased conditions caused by different infective agents with thorough information on the drugs actions, mechanism of actions, pharmacokinetics, side effects, toxicity, interactions and the hazards of veterinary drugs uses on environment and human health like drug residues.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1-** Explain the basics of general pharmacology (actions, mechanism of actions, sources , pharmaceutical forms, routes of administration of drugs) and factors affecting the actions and doses of drugs.
- A2-** Define and calculate drug-receptor interaction and dose response curve.
- A3-** Recognize the drug residues and drug interactions.
- A4-** Describe the specific drugs affecting the different body systems and organs beside autacoids and anti-inflammatory agents with special reference to their sources, structure, pharmacokinetics, actions ,mode of actions ,therapeutic uses , side effects , toxicities and interactions.
- A5-** Discuss the chemotherapeutic agents acting on bacterial , parasitic, mycotic , viral, and cancer diseases beside insecticides , rodenticides , antiseptics and disinfectants with special reference to their sources, structure, pharmacokinetics, actions ,mechanism of actions, spectrum of activity , therapeutic uses , side effects , toxicities , residues , interactions and contraindications.
- A6-** List the drugs affecting metabolism and growth promoting agents and treatment of some metabolic disorders.
- A7-** Describe the causes , signs ,diagnosis , treatment and antidotes of different cases of veterinary drug toxicities
- A8-** Identify the better approach with drugs to various field problems.
- A9-** Explain and respect in detail of ethical standards which will be developed in relation to veterinary drug therapeutics.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1-** Analyze ,summarize and evaluate information about drugs in professional manner.
- B2-** Criticize different treatment modalities in order to provide optimum drug therapy for animals.
- B3-** Select and administer drugs according to the specific diseased conditions and the specific causative agent.
- B4-** Establish a good link between drugs and their economy use in the veterinary field.
- B5-** Evaluate and manage different adverse drug reactions.
- B6-** Select the appropriate laboratory animal or in-vitro test for a specific experiment.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1-** Determine the drugs actions and mechanism of actions in vitro.
- C2-** Test the drugs actions and mechanism of actions in vivo.
- C3-** Prepare some pharmaceutical preparations essential for the field.
- C4-** Differentiate between different drug formulations and routes of administration. Prepare the laboratory animals and requirements efficiently.
- C5-** Detect the active principles of plants.
- C6-** Use appropriate basic laboratory equipments and animals safely and efficiently.

3- D: GENERAL and transferable SKILLS:

By the end of studying the course, the graduate should be able to:

- D1-** Perform group working , good management and problem solving ability.
- D2-** Conduct good communications.
- D3-** Use new technology and has the ability of self learning.
- D4-** Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

SNO.	TOPIC	Total hours	Hours for lecture	Hours for practical
1	General pharmacology.	8	8	-
2	Drugs acting on the autonomic nervous system.	8	8	-
3	Autacoids and anti-inflammatory agents.	8	8	-
4	Drugs acting on the central Nervous system.	6	6	-
5	Drugs acting on the digestive, respiratory, cardiovascular, urinary and reproductive systems.	16	16	-
6	Drugs acting on the skin and eye.	6	6	-

7	Drugs affecting metabolism and growth promoting agents.	8	8	-
8	Chemotherapy.	20	20	-
9	Drug toxicology	10	10	-
10	Clinical pharmacology.	6	6	-
11	Drug forms and routes of drug administration.	6	-	6
12	Laboratory animal handling, anaesthesia and requirements	6	-	6
13	Isolated organ bath system (oscillograph) parts, applications and uses.	6	-	6
14	Experimental pharmacology on isolated preparations.	14	-	14
15	Experimental pharmacology on intact animals.	14	-	14
16	Prescription writing , Posology and Metrology.	8	-	8
17	Compounding and dispensing of drugs.	16	-	16
18	Bioassay of drugs.	12	-	12
19	Plants and their active principles Extraction of plants. Preliminary chemical investigation of active principles in plants. Separation of some active principles of plants. Astringent effect of drugs.	10	-	10
20	Drug samples.	4	-	4
	Total	192	96	96

5- TEACHING & LEARNING METHODS:

***Lectures:**

Using data show.

***Practical and small group sessions:**

Practical demonstrations, practice of skills and discussions

*** Self learning:**

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- **Audiovisual:**
Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

No disabled students until now, but if present the staff members in the department plan to hold several meetings with the students to face any difficulties that meet the students.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	At the end of academic year	At the end of academic year	AT the end of the academic year
<u>7.c grads</u>	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: Basic materials:

- Text books in Pharmacolgy available in library of the faculty.
- Overhead projections, Microscopes, , slides and computer presentations used during teaching.

8-2: Recmonded books:

- **Joel G. Hardman, Lee E. Limbird and Alfred G. Gilman (2001):** Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 10th Edition.
- **Walter H. Hsu, William O. Reece and William J. Reece (2008) :** Handbook of Veterinary Pharmacology, 1st edition.
- **H. Richard Adams (1995) :** Veterinary Pharmacology and Therapeutics, 7th Edition.
- **G. C. Brander, D. M. Pugh, R. J. Bywater and W. L. Jenkins (1991):** Veterinary applied pharmacology and therapeutics , 5th Edition.
- **Merck , S. and Dohme , C. (2005) :** The Merck Veterinary Manual, 9th Edition.

8-3: Suggested books:

- **Clive , P., Brian, H., Michael, C. and Michael, W. (2006):** Integrated Pharmacology: With Student Consult Access, 3rd Edition.
- **Heinz Lüllmann, M. D.,Klaus Mohr, M. D.,Albrecht Ziegler, Ph.D.,Detlef and Bieger, M. D. (2005) :** Color Atlas of Pharmacology , 3rd edition .
- **Carl Binz (2008):** Lectures on pharmacology for practitioners and students ,Volume: v.2.
- **P. Venkatesan and M. J. Wood (1998):** General principles of antimicrobial therapy , pp. 63-78.

8.4: Web sites and jouranlsand so on:

- Journal of pharmacology and experimental therapeutics.
- British Journal of pharmacology.
- European Journal of Pharmacology.
- Pharmacology, Biochemistry and Behavior.

- <http://www.vetmed.wsu.edu/depts.-vcpl/>
- <http://www.cc.nih.gov/>
- <http://www.acvcp.org/>
- <http://www.clinicalpharmacology.com/>
- <http://www.vetnet.net/>
- <http://www.summitpk.com/pksolutions.htm>
- <http://www.analyticon.co.uk/pkpdpage.htm>
- <http://www.ncbi.nlm.nih.gov>

9.1. Course content ILOs Matrix:

TOPIC	K.U (A)	LS (B)	P.P.S (C)	G.T.S (D)
General pharmacology.	A1,A2,A3	-	-	D1 to D4
Drugs acting on the autonomic nervous system.	A4	B1 to B5	-	D1 to D4
Autacoids and anti-inflammatory agents.	A4	B1 to B5	-	D1 to D4
Drugs acting on the central Nervous system.	A4	B1 to B5	-	D1 to D4
Drugs acting on the digestive, respiratory, cardiovascular, urinary and reproductive systems.	A4	B1 to B5	-	D1 to D4
Drugs acting on the skin and eye.	A4	B1 to B5	-	D1 to D4
Drugs affecting metabolism and growth promoting agents.	A6	B1 to B7	-	D1 to D4
Chemotherapy.	A5	B1 to B5	-	D1 to D4
Drug toxicology	A7	B1 to B5	-	D1 to D4
Clinical pharmacology.	A8,A9	B1 to B5	-	D1 to D4
Drug forms and routes of drug administration.	-	-	C4	D1 to D4
Laboratory animal handling, anaesthesia and requirements	-	-	C5	D1 to D4
Isolated organ bath system (oscillograph) parts,	-	-	C5	D1 to D4

applications and uses.				
Experimental pharmacology on isolated preparations.	-	B6	C1	D1 to D4
Experimental pharmacology on intact animals.	-	B6	C2	D1 to D4
Prescription writing , Posology and Metrology.	-	-	C3	D1 to D4
Compounding and dispensing of drugs.	-	-	C3,C7	D1 to D4
Bioassay of drugs.	-	B6	C1,C2	D1 to D4
Plants and their active principles	-		C6	D1 to D4
Extraction of plants.				
Preliminary chemical investigation of active principles in plants.		-		
Separation of some active principles of plants.				
Astringent effect of drugs.				
Drug samples.	-	-	C4	D1 to D4

9.2. Assessment ILOs Matrix:

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectual	Practical	general	
Written examination	A1, A2, A3., A4, A5, A6, A7, A8,A9	B1, B2, B3, B4, B5, B6	-	D2, D3	50
Oral examination	A1, A2, A3., A4, A5, A6, A7, A8,A9	B1, B2, B3, B4, B5, B6	-	D4	25
Practical examination	-	B6	C1, C2, C3 C4,C5,C6,C7	D1,	25

Course Coordinators:

Head of Department:

Prof.Dr. Mostafa Abd El-aziz
 Prof.Dr. Kamal Ahmed El-Shazly
 Dr.Amira Shehata Alam El Deen

Prof. Dr. Abo Elnasr Ahmed Ibraheem Zahra

KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF FORENSIC MEDICINE AND TOXICOLOGY

**Course specification of
Veterinary toxins
(2016 / 2017)**

1 - Basic Information:

Course title: **Veterinary toxins**

Academic Year: **Diploma of pharmacology and Pharmacy**

Total teaching hours: **144 hrs.**

Lectures: **48**

Practical: **96**

2 - OVERALL AIMS OF THE COURSE:

Student should be able to:

know, manage and prevent veterinary toxins problems.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1. Recognize The major veterinary toxins, sources, pathways and fate of major toxicants; specific effects on organisms; physiological & biochemical principles of toxicity testing; LD50 & NOEC.

A2. Define the impact of veterinary toxins.

A3. Describe the general lines of veterinary toxins management.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1. Interpret the different veterinary toxins.

B2. Make a list of feed additives used in agriculture and veterinary medicine in Egypt.

B3. point out the risks arising from exposure to veterinary toxins .

B4. solve problems and gain experience through visits to sites related to food of animal origin.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1. Conduct suitable sample collection, chemical and biological methods of analysis, analytical quality control, toxicity tests.

C2. Report the toxic effects of veterinary toxins.

C3. Apply qualitative and quantitative methodologies in detection of toxins.

C4. Make management plan for dealing with veterinary toxins problems.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Coach and work in groups.

D2-Classify different duties

D3- Utilize computer and internet skills.

D4-Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
General toxicology	24	8	16
Sources and Mechanisms of toxicity	24	8	16
Major Veterinary toxins and their detection	24	8	16
environmental toxins	24	8	16
Occupational toxins	24	8	16
Management and prevention of toxicity	24	8	16
Total	144	48	96

5- TEACHING & LEARNING METHODS:

* **Lectures:** Using data show and white board, brain storming, case study, seminars.

* **Practical sessions:** Practical training, Practical demonstrations, practice of skills, and discussions)

* **self-learning:**

- Library researches.
- Internet researches.
- Discussion in the researches.

6. METHODS FOR STUDENTS With LIMITED CAPABILITIES:-

- Discussion with them during practical session.
- Theoretical and practical teaching suitable for people with limited capacity.
- Simplify and re-explain the information theoretically and practically wherever needed .
- Using of illustrated cases.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	At the end of 48 weeks	At the end of 48 weeks	At the end of 48weeks
<u>7.c grades</u>	50	20	30

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- **Department notes:** available for students to purchase from bookshops in front of the faculty.
 - Slides, samples, computer presentations and laboratory tests are used and made during teaching.

8-2: Recmended books:

- the following books are present in faculty library

اسم المؤلف	الرقم العام	عنوان الكتاب
g.lorgue	1818	Clinical veterinary toxicology
Myral.clarkel d.g.harvey	361	veterinary toxicology
Tedn.loomis m.d.phip	102	Loomis,s essentials of toxicology
Myral clark d.g.harvey	360	veterinary toxicology
w.norman al dridge	1452	Mechanisms and concepts in toxicology
Ministry of agriculture fisheries.food	1480	Pesticides 1996
Frotne pfinder	705	Acolour atlas of poisonous plants
Myral. Clarke	880	veterinary toxicology
Karehe. Stine Thomas mibrown	1456	Principles of toxicology
Raymond g.mniesim	1691	Toxicology Principles and applications
Ted a.loomis a.wallacehayes	1450	Loomis,s essentials of toxicology
d.klaassen	1976	Casarett and doull,s toxicology the basic science of poisons
Satishk.garg	2426	veterinary toxicology
Joseph d.roder	1993	veterinary toxicology
John a.king	1212	Toxic properties of pesticides
Myral. Clarke	357	veterinary toxicology
Stanleye.manahan	2274	Toxicological chemistry and biochemistry
Myral. Clarke	359	veterinary toxicology
Myral. Clarke	358	veterinary toxicology
Rogerw.gfeller pvm	1817	Handbook of small animal toxicology
Frank g.lu	1744	basic toxicology
Michaelj.derelanko	1988	Toxicologist,s pocket handbook
Thomasa.gossel	883	Principles of clinical toxicology
Teda.loomis.a.wallace hayes	1454	Loomis,s essentials of toxicology

a.wallace hayes	1160	Principles and methods of toxicology
Roberta lewis	1819	Lewis dictionary of toxicology
Iras.richaards	2499	Principles and practice of toxicology
Lewisr.colderfak	1416	Gold frank,s toxicologic emergencies
Gary.m.rand.phd	1449	Fundamentals of aquatic toxicology

8.4: web sites and jouranlsand so on

www.toxicology.org

www.toxnet.nlm.nih.gov

[Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology](#)

Intended learning out comes of each topic

TOPIC	K.U (a)	IS (b)	P.P.S (c)	G.T.S (d)
General toxicology	A3	B1	C1	D1-D2-D4
Sources and Mechanisms of toxicity	A1, A2	B2, B3	C2	D1-D2-D3-D4
Major Veterinary toxins and their	A1	B4,	C1	D1-D2-D3-D4

detection				
environmental toxins	A1, A2	B1, B4	C1, C2, C3	D1-D2-D3-D4
Occupational toxins	A1.A2	B4,	C1, C2, C3	D1-D2- D4
Management and prevention of toxicity	A3	B4	C3,C4	D1-D2- D4

Evaluation Intended learning out comes

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectual	Practical	general	
Written examination	A1. A2. A3	B2. B3	-	D3.	50
Oral examination	A1. A2. A3	-		. D4	25
Practical examination	-	B1. B4.	C1. C2. C3,C4	D1, D2	25

Course Coordinator:

Head of Department:

DR,tarek ahmed abd elhady

prof.dr. Hanaa Mohamed hegazy

KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF FORENSIC MEDICINE AND TOXICOLOGY

**Course specification of
Advanced general toxicology
(2016 / 2017)**

1 - Basic Information:

Code No.: 245 (1)

Course title: Advanced general toxicology

Academic Year: Pre-master of B. V. Sc. Program

Total teaching hours: 240 hrs.

Lectures: **96**

Practical: **144**

2 - OVERALL AIMS OF THE COURSE:

Student should be able to:

Demonstrate the knowledge of types, actions, clinical features, circumstances, diagnosis, detection, and management of poisoning which operate on the animal body.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1. Define the types, sources and circumstances of poisoning.
- A2. Describe mode of action and metabolism of toxic substances.
- A3. Identify factors affecting the degree of poisoning.
- A4. memorize the general line of treatment and diagnosis of toxicological cases.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1. Interpret the features of different types of poisons for proper diagnosis and management.
- B2. Point out the serious consequences of toxic agent exposure and develop knowledge for how to prevent, manage and respond to toxin threats.
- B3. Select decisions regarding common clinical situations using appropriate problem solving skills and relevant ethical principles.
- B4. Categorize and analyze the toxic dose of different toxins.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1. Model the most important causes, symptoms and proper treatment of different toxicological cases.

C2. Apply screening tests on labs to identify and diagnose toxic substances in different samples.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Coach and work in groups.

D2- Classify different duties

D3- Utilize computer and internet skills.

D4. Memorize the basics and ethics of scientific research.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Introduction to general toxicology	12	12	-
Toxicokinetics	12	12	-
The action of poisons	36	12	24
Factors influencing toxicity	36	12	24
Diagnostic toxicology	36	12	24
Therapy and management of toxicology	36	12	24
Antidotes	36	12	24
Different types of toxins	36	12	24
Total	240	96	144

5- TEACHING & LEARNING METHODS:

Lectures: Using data show and white board, brain storming, case study, seminars.

Practical sessions: Practical training, Practical demonstrations, practice of skills, and discussions)

self-learning

- Library researches.
- Internet researches.
- Discussion in the researches.

6. METHODS FOR STUDENTS With limited capabilities:-

- Discussion with them during practical session.
- Theoretical and practical teaching suitable for people with limited capacity.
- Simplify and re-explain the information theoretically and practically wherever needed.
- Using of illustrated cases.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	At the end of 48 weeks	At the end of 48 weeks	At the end of 46 weeks
7.c grads	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- **Department notes:** available for students to purchase from bookshops in front of the faculty.
- Slides; samples, computer presentations and laboratory tests are used and made during teaching.

8-2: Recmnded books:

- the following books are present in faculty library

اسم المؤلف	الرقم العام	عنوان الكتاب
g.lorgue	1818	Clinical veterinary toxicology
Myral.clarkel d.g.harvey	361	veterinary toxicology
Tedn.loomis m.d.phip	102	Loomis,s essentials of toxicology
Myral clark d.g.harvey	360	veterinary toxicology
w.norman al dridge	1452	Mechanisms and concepts in toxicology
Ministry of agriculture fisheries.food	1480	Pesticides 1996
Frotne pfinder	705	Acolour atlas of poisonous plants
Myral. Clarke	880	veterinary toxicology
Karehe. Stine Thomas mibrown	1456	Principles of toxicology
Raymond g.mniesim	1691	Toxicology Principles and applications
Ted a.loomis a.wallacehayes	1450	Loomis,s essentials of toxicology
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Joseph d.roder	1993	veterinary toxicology
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Myral. Clarke	359	veterinary toxicology
Myral. Clarke	358	veterinary toxicology
Rogerw.gfeller pvm	1817	Handbook of small animal toxicology
Frank g.lu	1744	basic toxicology
Michaelj.derelanko	1988	Toxicologist,s pocket handbook
Thomasa.gossel	883	Principles of clinical toxicology
Teda.loomis.a.wallace hayes	1454	Loomis,s essentials of toxicology
a.wallace hayes	1160	Principles and methods of toxicology
Roberta lewis	1819	Lewis dictionary of toxicology
Iras.richaards	2499	Principles and practice of toxicology
Lewisr.colderfak	1416	Gold frank,s toxicologic emergencies
Gary.m.rand.phd	1449	Fundamentals of aquatic toxicology

8.4: web sites and jouranlsand so on

www.toxicology.org

www.toxnet.nlm.nih.gov

[Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology](#)

Intended learning out comes of each topic

TOPIC	K.U (a)	LS (b)	P.P.S (c)	G.T.S (d)
Introduction to general toxicology	A1, A4	B1, B4	-	D3, D4
Toxicokinetiks	A2	B2	-	D3, D4
The action of poisons	A2	B1	C1	D1-D2-D3
Factors influencing toxicity	A3	B4	C1, C2	D3
Diagnostic toxicology	A4	B1, B3	C1, C2	D1-D2-D3

Therapy and management of toxicology	A4	B1, B3	C1, C2	D1-D2
Antidotes	A4	B1, B2,	C1	D1-D2
Different types of toxins	A1, A2, A3, A4	B1, B2, B4	C1, C2	D4
Total				

Evaluation Intended learning out comes

Methods	Knowledge	I.L.O.S Evaluation		general	Marks allocated
		Intellectual	Practical		
Written examination	A1.A2.A3.A4.				50
Oral examination	A1.A2.A3.A4	B1.B2.B3.B 4		D2, D4	25
Practical examination	-	-	C1.C2		25

Course Coordinator:

Head of Department:

KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF FORENSIC MEDICINE AND TOXICOLOGY

Course specification of Environmental toxicology (2016 / 2017)

1 - Basic Information:

Code No.: 246 (1)

Course title: Environmental toxicology

Academic Year: Pre-master of B. V. Sc. Program

Total teaching hours: 192 hrs.

Lectures: 96

Practical/small group sessions: 96

2 - OVERALL AIMS OF THE COURSE:

Student should be able to:

- Describe the nature of environmental toxins.
- Learn about types and sources and characteristics of environmental pollutants.
- Recognize the different ways of spread and distribution of contaminants and their relationship to the surrounding environment.
- Be a ware to detect and determine the path of environmental contaminants on the level of the surrounding environment or in living organisms.
- Identify the different methods of analysis to environmental pollutants and estimate residues in different parts of the environment.
- Become able to diagnose of different cases exposed to environmental pollutants.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1. **Defines** scientific terms and definitions related to environmental toxins

A2. **Identify** the impact of pollutants in the environment.

A3. **Recognize** specific areas including: the major environmental toxicants, both organic & inorganic; sources, pathways and fate; specific effects on organisms; physiological & biochemical principles of toxicity testing; LD50 & NOEC.

A4. **Describe** the basics and scientific theories to find ways of assessing environmental toxins.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1. **Interpret** the different environmental toxic substance.

B2. **point out** the risks arising from exposure to toxins and various pollutants.

B3. **Analyze** other scientific toxicological researches and data.

B4. **Diagnose** various symptoms associated with toxic effects of environmental pollutants.

B5. **Determine** the appropriate treatment.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1. **Make monitoring to** environmental pollution.

C2. **Report** the toxic effects of pollutants on environment.

C3. **Conduct** suitable sample collection, chemical and biological methods of analysis, analytical quality control, Toxicity tests.

C4. **Diagnose** the affected cases clinically.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- **Coach** and work in groups.

D2- **Classify** different duties

D3- **Utilize** computer and internet skills.

D4. **Analyze** the results to draw conclusions.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Basic of general toxicology	32	16	16
Types and sources and characteristics of environmental toxins	40	20	20
Toxic effects and types of poisoning caused by various environmental toxins	40	20	20
Spread of pollutants in different environments and Pollution Monitoring	40	20	20
Residues of contaminants in the environment	40	20	20
Total	192	96	96

5- TEACHING & LEARNING METHODS:

- * **Lectures:** Using data show and white board, brain storming, case study, seminars.
- * **Practical sessions:** Practical training, Practical demonstrations, practice of skills, and discussions)
- * **self-learning**
 - Library researches.
 - Internet researches.
 - Discussion in the researches.

6. METHODS FOR STUDENTS With limited capabilities:-

- Discussion with them during practical session.
- Theoretical and practical teaching suitable for people with limited capacity.
- Simplify and re-explain the information theoretically and practically wherever needed .
- Using of illustrated cases.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
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7.b time	At the end of 48 weeks	At the end of 48 weeks	At the end of 46 weeks
7.c grads	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- **Department notes:** available for students to purchase from bookshops in front of the faculty.
 - Slides, samples, computer presentations and laboratory tests are used and made during teaching.

8-2: Recmended books:

- the following books are present in faculty library

اسم المؤلف	الرقم العام	عنوان الكتاب
g.lorgue	1818	Clinical veterinary toxicology
Myral.clarkel d.g.harvey	361	veterinary toxicology
Tedn.loomis m.d.phip	102	Loomis,s essentials of toxicology
Myral clark d.g.harvey	360	veterinary toxicology
w.norman al dridge	1452	Mechanisms and concepts in toxicology
Ministry of agriculture fisheries.food	1480	Pesticides 1996
Frotne pfander	705	Acolour atlas of poisonous plants
Myral. Clarke	880	veterinary toxicology
Karehe. Stine Thomas mibrown	1456	Principles of toxicology
Raymond g.mniesim	1691	Toxicology Principles and applications
Ted a.loomis a.wallacehayes	1450	Loomis,s essentials of toxicology
d.klaassen	1976	Casarett and doull,s toxicology the basic science of poisons
Satishk.garg	2426	veterinary toxicology
Joseph d.roder	1993	veterinary toxicology
John a.king	1212	Toxic properties of pesticides
Myral. Clarke	357	veterinary toxicology
Stanleye.manahan	2274	Toxicological chemistry and biochemistry
Myral. Clarke	359	veterinary toxicology
Myral. Clarke	358	veterinary toxicology
Rogerw.gfeller pvm	1817	Handbook of small animal toxicology
Frank g.lu	1744	basic toxicology
Michaelj.derelanko	1988	Toxicologist,s pocket

		handbook
Thomasa.gossel	883	Principles of clinical toxicology
Teda.loomis.a.wallace hayes	1454	Loomis,s essentials of toxicology
a.wallace hayes	1160	Principles and methods of toxicology
Roberta lewis	1819	Lewis dictionary of toxicology
Iras.richaards	2499	Principles and practice of toxicology
Lewisr.colderfak	1416	Gold frank,s toxicologic emergencies
Gary.m.rand.phd	1449	Fundamentals of aquatic toxicology
Wayne g landis	1418	Introduction to environmental toxicology

8.4: web sites and jouranlsand so on

www.toxicology.org

www.toxnet.nlm.nih.gov

[Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology](#)

[International Journal of Medical Toxicology and Forensic Medicine : A Quarterly Journal](#)

[Published by the Department of Forensic](#)

[Medicine, Shahid Beheshti University of Medical Sciences, Tehran-I.R. Iran.](#)

Intended learning out comes of each topic

TOPIC	K.U (a)	LS (b)	P.P.S (c)	G.T.S (d)
Basic of general toxicology	A1. A3	B2. B3.B5	C3. C4. C5	D1. D2. D4
Types and sources and characteristics of environmental toxins	A3	B1	C1	D1. D2. D3
Toxic effects and types of poisoning caused by various environmental toxins	A1. A3	B2. B4	C2. C4. C5	D1. D2. D3
Spread of pollutants in different environments and Pollution Monitoring	A3. A4	B3	C1. C3	D1. D2. D3. D4

Residues of contaminants in the environment Total	A3. A4	B2. B3	C2. C3	D1. D2. D3. D4
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Intended learning outcomes Evaluation

Methods	Knowledge	I.L.O.S Evaluation		general	Marks allocated
		Intellectual	Practical		
Written examination	A1. A2. A3. A4			D4	50
Oral examination	A1. A2. A3. A4	B1. B2. B3. B4. B5		D3	25
Practical examination	-	-	C1. C2. C3. C4		25

Course Coordinator:

Head of Department:

KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

**Course specification of
forensic toxicology
(2016 / 2017)**

1 - Basic Information:

Code No.: 247 (1)

Course title: **Forensic toxicology**

Academic Year: **Pre-master of B. V. Sc. Program**

Total teaching hours: 192 hrs.

Lectures: 96

Practical/small group sessions: 96

2 - OVERALL AIMS OF THE COURSE:

Student should be able to:

acquire diagnostic skills, ability to use appropriate technological means for identification of the cause of deaths and write medico legal report concerning toxicological case.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1. **Describe** types of criminal toxins, their characteristics and harmful effects.

A2. **Define** the theories and fundamentals related to the field of Forensic Medicine and Toxicology.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1. **Examine** the dead and alive cases and connect between the circumstances of these cases and anatomical lesions.

B2. **Classify** criminal causes of death.

B3. **Investigate** the strange toxicological crimes.

B4. **Construct** new methods used in solving problems in forensic toxicology.

B5. **criticize** medico legal reports.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1. **Apply** appropriate autopsy procedures and sampling technique.

C2. **Detect and measure** toxins with correct scientific methods.

C3. **Interpret** the analytical findings in the context of medico-legal investigation.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- **Coach** and work in groups.

D2- **Classify** different duties

D3- **Utilize** computer and internet skills.

D4. **Acquire** the updated technical and applied skills associated with the field of Forensic Medicine and Toxicology.

4 - COURSE CONTENTS:

TOPIC	Total hours (Semester)	Hours for lecture	Hours for practical
General and clinical toxicology	32	16	16
General forensics	32	16	16
Basis of drugs toxicity	32	16	16
Environmental toxicology	32	16	16
Basis of Analytical toxicology	32	16	16
Postmortem examination and medico-legal reports	32	16	16
Total	192	96	96

5- TEACHING & LEARNING METHODS:

* **Lectures:** Using data show and white board, brain storming, case study, seminars.

* **Practical sessions:** Practical training, Practical demonstrations, practice of skills, and discussions)

* **self-learning:**

- Library researches.
- Internet researches.
- Discussion in the researches.

6. METHODS FOR STUDENTS With limited capabilities:-

- Discussion with them during practical session.
- Theoretical and practical teaching suitable for people with limited capacity.
- Simplify and re-explain the information theoretically and practically wherever needed .
- Using of illustrated cases.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination	Practical examination
7.b time	At the end of 48 weeks	At the end of 48 weeks	At the end of 46 weeks
7.c grads	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- **Department notes:** available for students to purchase from bookshops in front of the faculty.
 - Slides, samples, computer presentations and laboratory tests are used and made during teaching.

8-2: Recmended books:

- the following books are present in faculty library

اسم المؤلف	الرقم العام	عنوان الكتاب
Keith simpson	700	forensic medicine ^ا
Stephen probinson	1451	Principles of forensic medicine
Keith simpson	702	forensic medicine

اسم المؤلف	الرقم العام	عنوان الكتاب
g.lorgue	1818	Clinical veterinary toxicology
Myral.clarkel d.g.harvey	361	veterinary toxicology
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www.toxicology.org

www.toxnet.nlm.nih.gov

www.medindia.net

www.amjforensicmedicine.com

[International Journal of Medical Toxicology and Forensic Medicine : A Quarterly Journal
Published](#)

[by the Department of Forensic Medicine, Shahid Beheshti University of Medical Sciences, Tehran I.R.Iran.](#)

[- Forensic Science International](#)

[- Journal of forensic science](#)

[- American journal of Vet. Res](#)

[- American Journal of physiology](#)

Intended learning out comes of each topic

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
General and clinical toxicology	A1. A2	B3	C2. C3	D3. D4
General forensics	A2	B1. B2. B4. B5	C1	D3. D4

Basis of drugs toxicity	A1. A2	B3	C2. C3	D3. D4
Environmental toxicology	A1, A2	B3. B4	C2. C3	D1. D2. D3
Basis of Analytical toxicology	A1,A2	B4	C2. C3	D1. D2
Postmortem examination and medico-legal reports	A2	B1. B2. B5	C1	D1. D2
Total				

Evaluation Intended learning out comes

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectual	Practical	general	
Written examination	A1. A2				50
Oral examination	A1.A2	B1. B2. B3. B4. B5	C1. C2. C3	D4	25
Practical examination	-	-	C1. C2, C3		25

Course Coordinator:

Head of Department:



Kafrelsheikh University
Faculty of Veterinary Medicine



Kafrelsheikh University

Faculty of Veterinary Medicine

Department of Theriogenology

Program Specification for Master Degree

(2021 - 2022)

Program Title:

Master of The Veterinary Science

(Reproduction)



A- Administrative information:

- 1- **Awarding Body:** Kafrelsheikh University
- 2- **Teaching Body:** Faculty of Veterinary Medicine
- 3- **Department responsible:** Theriogenology
- 4- **Program Title:** Reproduction
- 5- **Final award:** Diploma Degree
- 6- **Registration period:** one year
- 7- **Program Co- coordinator:** Prof. Dr.: Ismail Ismail Al-Kon

B- Professional information:

1- Aim of the Program:

- To provide the student of diploma with the at most professional skill in practices of obstetrics and gynecology.
- To supply the graduated students with the most recent knowledge in science and technological applications of reproduction.
- A Good grade in Diploma can serve as a basis for admission to master of veterinary medical science in the field of the reproductive management and biotechnology thereafter.

2- Academic standards:

Academic reference standards (ARS) adopted by the faculty committee No 1(14/9/2014)

3-Graduate attributes:

At the end of the program, graduate must be able to:

- 3.1. Apply the gained specific knowledge and the relevant ones in professional practice.
- 3.2. Identify the professional problems and suggest solutions of the focus area.



- 3.3. Show satisfactory interpersonal and communication skills in his professional practice.
- 3.4. Communicate effectively and lead work team through professional scale.
- 3.5. Make decision according to the available information
- 3.6. Use of the available resources efficiently
- 3.7. Awareness with his role in society development and community preservation.
- 3.8. Reflects the commitment to act with integrity, credibility, and the rules of profession
- 3.9. Realize the importance of self and life-long learning.

4-Programme outcomes [intended learning outcomes (ILOs)]

a. Knowledge and understanding:

On successful completion of this programme, graduate will be able to:

- a.1. Recognize the importance of reproductive management in veterinary field and its great impact on animal production.
- a.2. Describe the advanced diagnostic methods of gynecological and obstetrical problems in farm animals .
- a.3. Distinguish the infectious and non-infectious causes of infertility in female.
- a.4. Define the advanced regimes for treatment of Gynecological and obstetrical problems in farm animals.
- a.5. Discuss the methods of evaluation of reproductive performance in farm animals
- a.6. Memorize the ethical and legal principles for the proper manipulation and diagnosis of reproductive disorders during pregnancy, parturition and puerperium.
- a.7. Realize professional theories treatment and control in the area of infertility particularly in the commercial farming systems.



a.8. Recognize the quality basics and principles for the interpretation of records and recording systems for assessing the reproductive management and rate of fertility in a herd.

b. Intellectual skills:

At the end of the program, graduate must be able to:

- b.1.** Analyze the problems and reasons of lowering the productive and reproductive potentials of livestock and ordering them according to their priority.
- b.2.** Make prophylactic plans for reducing dystocia and puerperial problems.
- b.3.** Arrange the scientific approach to dystocia and infertility cases in farm animals
- b.4.** develop advanced programs for improving the reproductive performance in farm animals especially those kept in large herds.
- b.5.** Make professional decisions according to the scientific materials which help to overcome these disorders either via the network connection or the contact with more professional experts.
- b.6.** develop creative approaches for solving the technical problems or issues associated with the sustained research projects.

c. Practical and professional skills:

At the end of the programme, graduate must be able to:

- c.1.** Apply professional skills in the area of Gynecology and obstetric.
- c.2.** Perform ultrasonography in the field of reproduction.
- c.3.** Analyze the female reproductive hormones.
- c.4.** Diagnose obstetrical problems during pregnancy, parturition (dystocia) and puerperium.
- c.5.** Fulfill laboratory techniques for diagnose of infectious causes of infertility



and abortion in farm animals .

c.6. Apply the advanced methods for heat detection and pregnancy diagnosis.

c.7. Apply the new reproductive programs such ovsync, presync etc.....

c.8. Write professional reports with special emphasis to understanding and interpretation of data which help in improving the economic values following introduction of a new management policy.

c.9 Mastery of research skills: e.g . the use of libraries and relevant index regarding the ability for planning and executing a research project in the field of reproductive biotechnology with a consideration to the technical, ethical and safety issues and associated costs.

d. General and transferable skills:

At the end of the programme, graduate must be able to:

d.1. Communicate effectively with his professors, collages and animal owner (s).

d.2. Utilize information technology to serve improvement of professional practice.

d.3. Self assessment and determine educational needs.

d.4. Present research findings in oral and written using appropriate software (e.g. power point, word, excel and database).

d.5. Work in multidisciplinary team and manage time and wok in research group.

d.6. Lead team under different professional circumstances.

d.7. Self and life-long learning

5. Program structure

a. Program duration (years):

- Diploma of full calendar year from December to November .

b. Program courses:

- Courses are given weekly in 2 theoretical hours and 3 practical hours for a full calendar year.
- Five courses are given for teaching diploma of reproduction as follows:

Course	Total hours	lecture hours per week	Practical hours per week
Obstetrics & Gynaecology	240	2	3
Reproductive pathology	144	1	2
Reproductive physiology	96	2	-
Reproductive anatomy & histology	144	1	2
Reproductive parasitology & immunity	144	1	2
Total	768	7	9

6-Teaching and Learning Methods:

The program features a variety of teaching approaches for different intended learning objectives, including lectures, practical and lab sessions, field visits and seminars.

7- Student assessment:

The program courses depends on different assessment ways:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills

Assessment of program intended learning outcomes

Tool or method	ILOs			
	K & U (a)	I.S (b)	P.P (c)	G.T (d)
Written	1-8	1,2,4,5,6		1-7
Oral	1-8	1,3,4		1-7
Practical		1,2,7	1-9	1-7

8-Marking scale as follow:-

Grade		Percentage
Excellent		> 90
Very good		>80
Good		>70
Pass		>60
Fail	weak	45 to less than 60
	very weak	Less than 45

9-Evaluation of program outcomes

Code	Evaluator	Tools	Sample
1	Postgraduate students	Questioners	20%
2	Stakeholder	Questioners & Open discussion	10
3	Alumni	Questioners	15
4	External examiners	report	1
5	External evaluators	report	1

10. Program Admission Requirements:

Applicant must normally satisfy the Faculty of Veterinary Medicine University of kafrelsheikh general entrance and requirement.

- The applicant must have regular attendance in his courses according to the schedule of the faculty.

11. Regulations for progression of program

- a) Registration period for the Diploma in veterinary medicine sciences is one year after the approval date by the Faculty council, and it should not exceed a period of two years.
- b) The student should conduct the courses proposed by both department council and approved by postgraduate and research committee and faculty council (article 32) in regulation law list and the student will entitled to apply for the exam. only after meeting attendance rate for each courses.
- c) The student should pass written, practical and oral exams successfully in all courses, and the grade will be estimated according to in regulation law list.
- d) The Faculty council has the right to deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- e) Registration will be during September of each year.
- f) Failure in or depriving from entering one or more course did not requires reexamination of successful passed courses.

12-Examination Regulations

- a- Time of written exam, 3 hours for each course that has 3 hours or more for lecture / practical /week. **If has less than 3 hours/week, the time of exam, is 2 hours only.**



Reproductive parasitology & immunity	1	2																															
						X	X			X							X		X							X	X	X	X	X	X	X	X
Total	7	8																															

a :Knowledge and understanding, b :Intellectual skills, Professional and c: practical skills and d : General and transferable skills.

Program Co-ordinator:

Head of Department:

Prof. Dr. Ismail Ibrahim

Prof. Dr. Esam Elmadaly



Program specification matrix of diploma of Reproduction (2014-2015)

Course title	Total Contact hours/ course	No. of hours / week			Program ILOs covered (by No.)			
		Lec t	Lab	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
Obstetrics & Gynaecology	180	2	3	5	a.1, a.2, a.3, a.6, a.7, a.8	b.1, b.2, b.3, b.4, b.5, b.6, b.7	c.1, c.2, c.3, c.6, c.7, c.8, c.9	d.1, d.2, d.3, d.4,d.5, d.6, d.7
Reproductive pathology	108	1	2	3	a.5, a.6	b. 2, b.7	c.4, c.5, c.9	d.2, d.3, d.4,d.5, d.6, d.7
Reproductive physiology	72	2	-	2	a.3, a.7	b. 2	c.2, c.9	d.2, d.3, d.4,d.5, d.6, d.7
Reproductive anatomy & histology	108	1	2	3	a.2, a.5	b. 2	c.9	d.2, d.3, d.4,d.5, d.6, d.7
Reproductive parasitology & immunity	108	1	2	3	a.4, a.6, a.8	b. 2, b.7	c.5, c.9	d.2, d.3, d.4,d.5, d.6, d.7
Total	576	7	9	16				

ARS for Diploma in Reproduction

1) **Graduate attributes**

At the end of the program, graduate must be able to::

- 1) Apply the gained specific knowledge and the relevant ones in animal reproduction practice.
- 2) Identify the professional problems and suggest solutions of animal reproduction
- 3) Show satisfactory interpersonal and communication skills in his professional practice.
- 4) Communicate effectively and lead work team through professional scale.
- 5) Make decision according to the available information
- 6) Use of the available resources efficiently
- 7) Awareness with his role in society development and community preservation.
- 8) Reflects the commitment to act with integrity, credibility, and the rules of profession
- 9) Realize the importance of self and life-long learning.

A) **Knowledge and understanding**

	Adopted ARS	NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Recognizing theories and principles of physiology, anatomy, histology, pathology, parasitology and microbiology of reproductive	Basics, theories and specific knowledge in educational field and sciences related to professional practice



	system	
2)	Recognizing ethical and legal principles for professional practice in the field of reproduction.	Ethical and legal principles related to professional practice
3)	Recognizing the bases of quality in reproduction.	Basics and principles of quality assurance in professional practice in the field of specialization
4)	Realize the impact of reproduction on environment and work to preserve and maintain the environment.	Impact of professional practice on environment and work to preserve and maintain the environment

B) Intellectual skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Determining and analyzing the reproductive problems and arrange them according to priorities.	Determination and analysis of professional problems in the field of specialization and arranging them according to priorities
2)	Solving reproductive problems of farm animal using the available facilities and information.	Solving professional problems in specialization field
3)	Reading analytically researches and scientific topics in the field of animal reproduction.	Analytical reading of researches and scientific topics in the field of specialization
4)	Assessing risks in the practices of animal reproduction.	Risk assessment in professional practice.
5)	Making professional decisions related to animal reproduction using available information.	Professional decision making using available information

C) Professional and practical skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and</i>

		<i>accommodate the following:</i>
1)	Applying basic and professional skills in the field of animal reproduction.	Applying professional skills in the field of specialization
2)	Fulfilling practical and Laboratory techniques for in the professional field.	
3)	Writing, concluding and evaluating a professional and conclusive report.	Writing professional reports

D) General and transferable skill

	Adopted ARS	NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Effective communication with teaching staff, colleagues and the community	Effective communication
2)	Utilizing information technology in scientific research and publications.	Utilizing information technology to serve development of professional practice.
3)	Updating information and knowledge and exchange it with staff and colleagues.	Self-assessment and determination of personal educational needs.
4)	Identifying and using different sources of information and knowledge in poultry and rabbits diseases and other related topics	Using different resources to obtain knowledge and information.
5)	Respecting the importance of team work and do good control of time.	Working in team and efficient time management.
6)	Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team	Leading a team in familiar professional contexts.
7)	Using the tools important for self and continuous learning	Self and continuous learning

خريج برنامج دبلومه الدراسات العليا في أي تخصص يجب أن يكون قادرا على:

١. تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
٢. تحديد المشكلات المهنية و اقتراح حلول لها
٣. إتقان المهارات المهنية واستخدام الوسائل التكنولوجية المناسبة في ممارسته المهنية
٤. التواصل و قيادة فرق العمل من خلال العمل المهني المنظمي
٥. اتخاذ القرار في ضوء المعلومات المتاحة
٦. توظيف الموارد المتاحة بكفاءة
٧. الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة
٨. التصرف بما يعكس الالتزام بالنزاهة و المصادقية و قواعد المهنة و تقبل المسائلة و المحاسبة
٩. إدراك ضرورة تنمية ذاته و الانخراط في التعلم المستمر

٢- المعايير القياسية العامة

١ المعرفة و الفهم. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على فهم و استيعاب كل من:

أ- النظريات و الأساسيات و المعارف المتخصصة في مجال التعلم وكذا العلوم ذات العلاقة بممارسته المهنية

ب- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص

ج- مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص

د- تأثير لممارسة المهنية على البيئة و العمل علي الحفاظ علي البيئة و صيانتها

٨

٢ المهارات الذهنية. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:

أ- تحديد و تحليل المشاكل في مجال التخصص و ترتيبها وفقا لأولوياتها

ب- حل المشاكل المتخصصة في مجال مهنته

ج- القراءة التحليلية للأبحاث و المواضيع ذات العلاقة بالتخصص

د- تقييم المخاطر في الممارسات المهنية

هـ- اتخاذ القرارات المهنية في ضوء المعلومات المتاحة

٣ المهارات المهنية. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:

أ- تطبيق المهارات المهنية في مجال التخصص

ب- كتابة التقارير المهنية

٤ المهارات العامة و المنتقلة. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:

أ- التواصل الفعال بأنواعه المختلفة

ب- استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية



- ج-التقييم الذاتي و تحديد احتياجاته التعليميه الشخصية
- د-استخدام المصادر المختلفة للحصول على المعلومات و المعارف
- هـ-العمل في فريق وإدارة الوقت
- و-قيادة فريق في سياقات مهنية مألوفة
- ز-التعلم الذاتي و المستمر

KAFR ELSHEIKH UNIVERSITY
FACULTY OF VETERINARY MEDICINE
DEPARTMENT OF REPRODUCTION

Course specification **(2021 / 2022)**

1 - Basic Information:

Code number : Obstetric and Infertility
Course title: Obstetric and Infertility
Academic Year: one year of Reproduction diploma.
Total teaching hours: 240 hrs
Lectures: **96 hrs**
Practical: 144 hrs

2 - OVERALL AIMS OF THE COURSE:

To provide student with basic knowledge and skills concerning Normal and abnormal pregnancy, parturition and puerperium . Also to supply them with knowledge concerning Fertility and infertility in the females of farm animals.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1- Define Normal and abnormal pregnancy, parturition and puerperium .
- A2- Describe obstetrical problems.
- A3-Identify the puerperial disturbances.
- A4- Recognize normal fertility of the female.
- A5- Define the causes of infertility in the female.
- A6- Recognize the causes, diagnosis and treatment of repeat breeders.
- A7-Describe the methods for improving the reproductive performance in a farm.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1-Differentiate between normal and abnormal pregnancy, parturition and puerperium.
- B2- Choose the suitable method for handling obstetrical problems.
- B3- Schedule a plan for following a female during normal or abnormal puerperium.
- B4- Categorize the infertility problems in a farm and suggest solving measures.
- B5- Become creative with application of new technologies in reproduction.

B6- Design for improving reproductive performance in a farm.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1-Diagnose and handle obstetrical problems during pregnancy, parturition and puerperium.

C2- Apply advanced techniques for care of postpartum cow and newborn.

C3-Use diagnostic aids such as ultrasonography for diagnosis of pregnancy and infertility problems.

C4- Training on the use of obstetrical and gynaecological tools.

C5-Diagnose the fertility problems and suggests treatment for them.

C6-Apply reproductive herd health programs on farm basis to sustain and improve fertility status.

C7- Use advanced current therapies in theriogenology.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Present patient's data in an organized and informative manner.

D2-Communicate effectively with animal's owners using appropriate communication skills.

D3-Demonstrate appropriate professional attitudes and behaviors in different practice situations.

D4- Coach and work in groups

D5- Utilize computer and internet skills.

D6-Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Normal and abnormal pregnancy	18	18	-
Normal and abnormal parturition	12	12	-
Normal and abnormal puerperium	18	18	-
Birth canal and diagnosis of dystocia	18	-	18
Neonatology and care of the postpartum dam	18	-	18
Methods of handling a case of dystocia	36	-	36
Pregnancy diagnosis	36	-	36
Reproductive ultrasonography for diagnosis of obstetrical infertility problems	36	-	36
Causes, diagnosis and treatment of infertility problems	30	30	-

Repeat breeders and reduced conception rate	12	12	-
Current therapies in theriogenology	6	6	-
Total	240	96	144

5- TEACHING & LEARNING METHODS:

*Lectures

using data show.

*Practical and small group sessions:

Practical demonstrations, practice of skills and discussions

* Site visits

Visits to dairy farms for practical application.

* Self learning

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.

- **Audiovisual**

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

No disabled students until now, but if present the staff members in the department plan to held several meetings with the students to face any difficulties that meet the students.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	oral examination	Practical examination
7.b time	During December following the end of the year	During December following the end of the year	two weeks before the end of the year
7.c grads	50	20	30

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Text books in Theriogenology available in library of the faculty.
- Overhead projections, Microscopes, , slides and computer presentations used during teaching.

8-2: Recmonded books:

8-3.a - Veterinary Reproduction and Obstetrics, 7th Ed. by Arthur G.H., et al. (1996).

- 8-3.b - Veterinary Obstetrics and Genital diseases, 3rd Ed. by Robert, G.R. (1986).
8-3.c - Current Therapy in Theriogenology, 1st Ed. by Morrow D.A. (1986).
8-3.d - Current Therapy in Large animal Theriogenology, 2nd ed., by Youngquist R.S. (2007).

8-3: SUGGESTED books:

- 8-2.a -Comparative reproductive Biology .(2007) by Schatten, H. and Constantinescu, G,M 1st Ed. Wiley-Blackwell.
8-2.b -Bovine Reproduction (2014) by Hopper, R.M, ISBN: 978-1-118-47083-1, ,Wiley-Blackwell
8-2.c -Insights from Animal Reproduction(2016) edited by Carreira, R. P., ISBN 978-953-51-2268-5, Publisher: InTech, Chapters published.
8-2.d -Biotechnology of Animal Reproduction(2016) by Seneda, M.M., Silva-Santos K.C.,
and Marinho, L.S.R.

8.4: web sites and jouranlsand so on

- 8.4.a-[Society for Theriogenology](#)
8.4.b-[Ruminant and camelid reproductive ultrasonography](#)
8.4.c-[REPRODUCTIVE ULTRASOUND - Virginia Herd Health Management Service](#)
8.4.d-[Reproduction](#)
8.4.e-J. of Animal Reproduction Science.
8.4.f- J. of Theriogenology.
8.4.j- Reproduction in Domestic Animals

9.1. Course content ILOs Matrix:

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Normal and abnormal pregnancy	A1	B1- B6	-	D1- -D6
Normal and abnormal parturition	A1	B1- B6	-	D1- -D6
Normal and abnormal puerperium	A1,A2	B1- B6	-	D1- -D6
Birth canal and diadnosis of dystocia	- A2,3	B1- B6	C1	D1- -D6
Neonatology and care of the postpartum dam	-	B1- B6	C2	D1- -D6
Methods of handling a case of dystocia	-	B1- B6	C1	D1- -D6

Pregnancy diagnosis	-	B1- B6	C3	D1- -D6
Reproductive ultrasonography for diagnosis of obstetrical infertility problems		B1- B6	C3	D1- -D6
Causes, diagnosis and treatment of infertility problems	A4-A5	B1- B6	C5-C7	D1- -D6
Repeat breeders and reduced conception rate	A6, A7	B1- B6	C5-C7	D1- -D6
Current therapies in theriogenology	-	B1- B6	C5-C7	D1- -D6

9-2. Assessment ILOs Matrix:

Methods	Knowledge	I.L.O.S Evaluation			Marks allocated
		Intellectual	Practical	general	
Written examination	A1,A2, A, A4, A5, A6, &A7.	B1		D2, D3	50
Oral examination	A1,A2, A, A4, A5, A6, &A7.	B1,B2, .B3, B4, B5 & B6		D1, D2, D3	20
Practical examination		B1,B2, .B3, B4, B5 & B6	C1- C7	D4.D5.D6	30

Course Coordinator:

Prof. Dr. Adel A. Ramoun.

Head of Department:

Prof. Dr. Esam Elmadaly

KAFR ELSHEIKH UNIVERSITY
FACULTY OF VETERINARY MEDICINE
DEPARTMENT OF PATHOLOGY

Course specification (2021 / 2022)

1 - Basic Information:

Code number:
Course title: Reproductive Pathology
Academic Year: Diploma programs (Reproduction)
Total teaching hours: 144hrs
Lectures: 48hr
Practical: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

Upon successful completion of the course, the student will be able to:

- Provide the student with mechanisms of affection of reproductive system in both male and female animals.
- Weigh up the infectious and non infectious etiologies on reproductive organs and tissues.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1- Define the basics of pathology including gross and microscopical alterations in reproductive organs.
A2- Recognize basic terminology for morphologic alterations in reproductive system.
A3- Discuss the fundamental basis of pathology and the mechanisms of pathological alterations caused by infectious or non-infectious agents in the genital systems.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1- Analyze and judge the gross, microscopical and ultrastructural findings in genital organs to reach the correct diagnosis.
B2- Manage problems of diagnosis of reproductive diseases even in cases associated with rare data.
B3- Relate different knowledge with the microscopical findings to get appropriate interpretations of different reproductive diseases.
B4- Characterize risks during necropsy of animals dying from infectious reproductive diseases.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1- Apply recent techniques and tools necessary to diagnose and characterize different reproductive diseases by gross, microscopical and ultrastructural investigations.
- C2- Provide a professional and conclusive pathological report on scientific bases.
- C3- Practice essential laboratory skills that underpin techniques associated with sampling, processing, staining and microscopical examination.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1- Coach and work in groups.
- D2- Classify different duties
- D3- Utilize computer and internet skills.
- D4- Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Pathology of the male reproductive System	33	11	22
Pathology of the female reproductive System	36	12	24
Failure of Pregnancy including early embryonic mortality, abortion, stillbirth	39	13	26
Fetal Abnormalities	36	12	24
Total	144	48	96

5- TEACHING & LEARNING METHODS:

***Lectures:**

using data show, white board and over head projector.

***Practical and small group sessions:**

Practical training: Practical demonstrations, practice of skills, and discussions.

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

Histopathological Drawings.



Library researches.
 Internet researches.
 Discussion in the researches.
 Preparation of scientific reports.

* **Audiovisual**

Television circle in the practical laboratory.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	One examination at the end of the academic Year	One examination at the end of the academic Year	One examination at the end of the academic Year
<u>7.c grads</u>	50	20	30

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Practical Department Notes: available for students to purchase from the department.
- Microscopes, slides, projector slides, Data show.

8-2: Recmended books:

- *Pathology of domestic animals, 4th ed. by Jubb K.V.F., Kennedy P.G. and Palmer N. (1994).*

8-3: SUGGESTED books:

- *Robbins & Cotran Pathologic Basis of Disease. Vinay Kumar, Nelso Fausto, Abul Abbas. Saunders; 7 edition, USA, 2004*
- *Veterinary pathology Textbook. (By Thomas Carlyle Jones, Ronald Duncan Hunt and Norval W. King, - Wiley-Blackwell, U.S.A., 1997).*

8.4: web sites and jouranlsand so on

- *PubMed*
- *Science direct*
- *IVIS*
- *Environmental Protection Agency (EPA)*



- *Food and Drug Administration (FDA)*
- *EPA: Integrated Risk Information System (IRIS)*
- *Egyptian Journal of Comparative Pathology and Clinical Pathology*
- *Pathologia Veterinaria*
- *American Journal of Pathology*
- *Archive of Pathology*
- *Veterinary Record IVIS*

Intended learning out comes of each topic

TOPIC	K.U (a)	IS (b)	P.P.S (c)	G.T.S (d)
<i>Pathology of the male reproductive System</i>	A1,A2,A3,	B2,B3,B4	C1,C2,C3	D1,D2,D3,D 4
<i>Pathology of the female reproductive System</i>	A3,	B1,B2	C2	D1,D2,D3,D 4
<i>Failure of Pregnancy including early embryonic mortality, abortion, stillbirth</i>	A2,A3	B3	C1, C3-	D1,D2,D3,D 4
<i>Fetal Abnormalities</i>	A2	-	C1, C3-	D1,D2,D3,D 4

Evaluation Intended learning out comes

Methods	I.L.O.S Evaluation			Marks allocated
	Knowledge	Intellectual	Practical	
Written examination	A1,A2,A3	B1,B2,B3,B4		D3 50
Oral examination	A1,A2,A3	B1,B3		D4 20
Practical examination		B2	C1,C2,C3	D1,D2, 30

Course Coordinator:

Dr. Samah Salem

Head of Department:

Prof. Dr. Ahmed Elsawak

KAFR ELSHEIKH UNIVERSITY
FACULTY OF VETERINARY MEDICINE
DEPARTMENT OF CYTOLOGY AND HISTOLOGY

Course specification **(2021 / 2022)**

1 - Basic Information:

Code number:

Course title: *Anatomy and Histology of Genital system*

Academic Year: *Diploma of Reproduction*

Total teaching hours: 144hrs hrs

Lectures: **48 hrs**

Practical:96 hrs

2 - OVERALL AIMS OF THE COURSE:

By the end of this course the graduates should be able to

- To provide student with basic knowledge concerning basic anatomy and histology of female and male genital system in farm animals.
- To let students gain skills enabling them to differentiate between normal and abnormal components of femal and male e genital system.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of this course the graduates should be able to:

- A1-** Recognize the microscopical picture of different tissues constituting the male and female genital system of farm animals.
- A2-** Describe histological structure of the different organs constituting the male **and female** genital system.
- A3-** define different components of the male and female genital system of different domestic animals,
- A4-** realize macroscopic structure of the different organs constituting the male **and female** genital system.
- A5-** State the structure of the different organs constituting the male **and female** genital system.
- A6-** outline the structural relationship between the different organs of the male **and female** genital system and between these organs and the other body organs.

3-B: INTELLECTUAL SKILLS:

By the end of this course the graduates should be able to:

- B1-** have the ability to identify the different histological structures of male and female genital system
- B2-** determine the anatomical structure of different organs of male and female genital system.
- B3-** differentiate between morphology of mal and female e genital system in different farm animals.
- B4-** create the ability to differentiate between healthy and non-healthy male and female genital system.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of this course the graduates should be able to:

- C1-** prepare an ideal male and female genital system samples and slides and learn how to read these slides.
- C2-** construct animal model and/or plastination for some organs of male and female genital system.
- C3-** examine the normal structure of male and female genital system.
- C4-** draw diagrams of macro- and microscopic structures of the male and female genital system indicating the site of most common affection.

3- D: GENERAL SKILLS:

By the end of this course the graduates should be able to:

- D1-** Coach and work in groups.
- D2-** Classify different duties
- D3-** Utilize computer and internet skills.
- D4-** Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Histology of male Genital system	36	12	24
Anatomy of Male genital system	36	12	24
Histology of female Genital system	36	12	24
Anatomy of female genital system	36	12	24
Total	144	48	96

5- TEACHING & LEARNING METHODS:

5.1. Lectures

The department council assigns one of the teaching staff to teach a special chapter in the course syllabus.. The teacher will use all the available teaching tools including data show and overhead projectors. The lectures usually take the form of open discussion

5.2. Discussion sessions

The student will be responsible for making a presentation about and discuss one subject (usually related to his thesis subject) in front of all department members

5.3. Information collection

The supervisors will make assignment for their student to collect data and make a complete review about one subject (usually related to his thesis subject).

5.4. Practical training / laboratory

The students will take the practical course under supervision of one of the department member 2 assistants. During the lab the student will do all practical syllabus by them self.

5.5. Research assignment field

The student will be responsible for searching for the most recent research pint and designs a plan for his research work.

6. METHODS FOR STUDENTS With limited capabilities:-

- *Activation of office hours.
- *Discusion with them during practical session.

7. STUDENT ASSESSMENT:-

7.A: ASSESSMENT Methods:

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	At the end of THE YEAR	At the end of the year	At the last week of practical course
<u>7.c grads</u>	50	20	30

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- **Department notes:** available for students to purchase from bookshops in front of the faculty.
- Overhead projections, Microscopes, TV closed center, slides and computer presentations used during teaching.

8-2: Recmended books:



- **Eurell J. A., Frappier B. L. (2007):Dellmann's Textbook of Veterinary Histology (6th Edition) .Blackwell publishing**
- Banks , W .J.(1993): Applied Veterinary Histology ,3rd.Ed. Mosby Year Book.ST .Louis ,Baltimore , Boston ,Chicago ,London ,Philadelphia , Sydney.

8-3: SUGGESTED books:

- Stevens, A, Lowe , J. S. and Young, B. (2002) : Wheaters Basic Histology , A colour Atlas and Text . 4th Ed . Churchill Livingstone. Edinburgh , London, New York, Philadelphia , St. Louis , Sydney , Toronto.
- Young , B. and Heath , J.W .(2000) : Weaters Functional of Histology . A text and Colour Atlas . 4th Ed . Churchill Livingstone. Edinburgh, London , New York, Oxford , Philadelphia , St Louis, Sydney , Toronto .

8.4: web sites and jouranlsand so on

- WWW.PubMed.com
- Intrnational of veterinary information services (IVIS)
- www.Vet.net.com
- journal of molecular histology
- Anatomia histologia embryologia journal
- Journal of veterinary anatomy.

Course content ILOs Matrex:

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Histology of male Genital system	A1,A2,A6	B1,B2,B3 B4	C1,C2, C3,C4	D1,D2, D3,d4
Anatomy of Male genital system	A3, A5,A6,	B1,B2,B3 B4	C1,C2, C3,C4	D1,D2, D3,d4
Histology of female Genital system	A1,A2,A6	B1,B3 B4	C1, C3,C4	D1,D2, D3,d4
Anatomy of female genital system	A3,A4,A6	B2,B3 B4	C2, C3,C4	D1,D2, D3,d4

Assessment ILOs Matrix:

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	general	
Written examination	A1.A2.A3.A4.A5.A6	B1.B2		D4	50
Oral examination	A1.A2.A3.A4.A5.A6	B1.B2.B3.		D3	20
Practical examination		B3.B4.	C1.C2.C3.C4. C5	D1,D2	30

Course Coordinator:

Dr Mohamed Kassab

Head of Department of cytology and histology

Dr Mohamed Kassab

Head of Department of Anatomy

Dr Mohamed Rizk

KAFR ELSHEIKH UNIVERSITY
FACULTY OF VETERINARY MEDICINE
DEPARTMENT OF PHYSIOLOGY

Course specification (2021 / 2022)

1 - Basic Information:

Course title: **Physiology of reproduction** (Animal physiology)..

Academic Year (**Diploma of reproduction**)

Total teaching hours: 96 hrs

Lectures: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

- 1- study hormone nature, types of hormones, hormonal cycle and types of hormone receptors.
- 2- understand the role of pituitary hormones in regulating other endocrine glands.
- 3- have the basic knowledge about the male and female reproductive systems function and regulation of the endocrine factors that participate pregnancy and milk secretion and milk letdown.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1- describe the molecular mechanism of the function of each endocrine gland in the body.

A2- explain the molecular mechanism of hormone action and the different hormonal interaction in the body.

A3- discuss the mechanism of endocrine glands disorders and their impacts on body functions

A4- recognize the basic knowledge about the male and female reproductive systems physiology, regulation and the endocrine factors that participate in normal sexual drive and fertility and the factors that may cause dysfunctions, infertility or sterility

A5- illustrate the mechanism of fertilization, embryogenesis, pregnancy, parturition, milk secretion and milk letdown.

2-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1- Evaluation of the endocrine gland function through measurement of different hormone level in the blood by ELIZA.

B2- Assessment of the different endocrine gland dysfunction

- B3-Measure the reproductive performance of male animal through evaluation of the semen sample.
 B4- Examination of the reproductive performance of female animal through measurement of different reproductive hormones

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

No practical part.

4- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able:

- D1-Coach and work in group.
 D2-Classify different duties.
 D3-Utilize computer and internet skills.
 D4-Develop the ethical behaviours between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Endocrine gland and Mechanism of hormonal action	20	20	-
Endocrine gland and hormonal disorder	30	30	-
Male and female Reproduction and function	16	16	-
Fertilization ,embryogenesis	16	16	-
Parturition and milk letdown	16	16	-
Total	96	96	-

5- TEACHING & LEARNING METHODS:

***Lectures**

(using data show, white board, overhead projector and brain storming)

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.

- Preparation of posters
- Preparation of scientific reports.
- * **Audiovisual**
Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

7.a Used methods	Written examination	Oral examination
7.b time	Week 48 th	Week 48 th
7.c grads	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

8-2: Recmended books:

8.2.a- Ruchebusch, Y., Phaneuf, I. and Dunlop, R (1991) Physiology of small and large Animals. B.C. Decker, Inc, Philadelphia, Hamilton.

8.2.b- Swenson M.J, Reece, W.O. and Comstock (1993) Duke's Physiology of Domestic Animals. 11th edition, publishing Associates a division of Cornell University press. Ithaca and London.

8.2.c- Gunningham, J. (1992) Text book of Veterinary Physiology. W.B. Saundero Company, Toronto, Montreal, Tokyo.

8.2.d- Guyton, A. (1991) Text book of Medical physiology. 8th, W.B. Saundero Company.

8.2.e- Ganong, W.F. (1989) Review of Medical Physiology. 9th (Middle East edition) Appleton and Lang.

8.2.f- Periodicals, Web Sites, ... etc.



8-3: SUGGESTED books:

8.3.a-Veterinary Physiology .

8.3.b- Textbook of Medical Physiology. Guyton and Hall, 1996.

8.4: web sites and jouranlsand so on

- WWW.PubMed.com
- Intrnational of veterinary information services (IVIS)
- www.Vet.net.com

Intended learning out comes of each topic in this course:

TOPIC	K.U (a)	LS (b)	P.P.S (c)	G.T.S (d)
Endocrine gland and Mechanism of hormonal action	A1,a2	B1	-----	D1-D4
Endocrine gland and hormonal disorder	A1,a2	B1,b2	-----	D1-D4
Male and female Reproduction and function	A3	B3	-----	D1-D4
Fertilization ,embryogenesis	A4	B4	-----	D1-D4
Parturition and milk letdown	A5	----	-----	D1-D4

Evaluation Intended learning out comes

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	General	
Written examination	A1-A5	B1-b4	-----	D3,D4	25
Oral examination	A1-A5	B1-b4	-----	D3,D4	25

Course Coordinator:
Dr. Mustafa Shukry Atta

Head of Department:
Prof.dr. Shawky Mahmoud

KAFRELSHEIKHUNIVERSITY
FACULTY OF VETERINARY MEDICINE
DEPARTMENT OF PARASITOLOGY

Course specification **(2021 / 2022)**

1- BASIC INFORMATION

Course title: Microbiology and Parasitology of Reproduction

Code No.:

Academic Year: 1st year of Diploma course (Diploma of reproduction)

Date of specification: Sept., 2016

Total teaching hours: 144 h

Lectures: 48 h

Practical: 96h

2- OVERALL AIMS OF THE COURSE:

To provide students with brief knowledge, skills and positive attitude concerning parasites of poultry and rabbits.

3- INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING (K.U):

By the end of the course students should be able to

A1-define the briefly fundamental concepts of Parasitology and with the technical vocabulary used in this field.

A2- discuss briefly how could arthropods are able to induce diseases in domesticated, certain wild animal, fish, birds and man.

A3-Identify briefly common taxa of arthropods based on morphological, biologic and geographical criteria and clinical observation.

A4-explain briefly the behavior and ecology of different arthropod species and stages in the environment.

3-B- Intellectual skills (I.S)

By the end of the course student should be able to

B1-organize briefly the factors responsible for differentiating between infection and disease caused by various parasites.

B2-analyze briefly the parasite-drug interaction and parasite-host interaction (Immune inter-relations between Parasite and the host).

B3- compare briefly between the diagnostic stages of different parasites.

3-C- Professional and practical skills (P.P.S)

By the end of the course student should be able to

C1-Diagnose the different parasitic infection in different hosts by simple direct and indirect methods.

C2- Select simple/rational treatment and control programs for arthropods population based on his/her knowledge of arthropods biology.

3-D- General and transferable skills (G.T.S)

By the end of the course student should be able to

D1-Coach and work in group.

D2-Classify different duties.

D3-Utilize computer and internet skills.

D4-Develop the ethical behaviours between students and staff members as well as among the students themselves.

4. COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	practical
Introduction	6	6	0
Helminthes of Theriogenology importance	22	6	16
protozoa of Theriogenology importance	24	8	16
arthropodes of Theriogenology importance	22	6	16
Viral infection of Theriogenology importance	24	8	16
Bacterial and fungal infection of Theriogenology importance	22	6	16
Diagnosis and Control parasites and microbes of Theriogenology importance	24	8	16
Total	144	48	96

5:- TEACHING & LEARNING METHODS:

5.1:- Lectures

(computer based presentations and white board, brain storming)

5.2:- Practical sessions:

1: Practical training

(Practical demonstrations, practical skills for diagnosis, and discussions)

5.3:- self learning

(Computer searches and faculty library visits to prepare essays)

- Library searches.
- Internet searches.
- Discussion of the prepared essays.
- Parasitological figures and drawings.

5.4:- Audiovisual



Television circuit in the laboratories

6. METHODS FOR DISABLED STUDENTS:-

- Special handling in the laboratory with extra time if needed.
- Ensure that all students with disabilities have equal access to educational opportunities and to help students to achieve academic and personal success.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	At the end of 48 weeks	At the end of 48 weeks	At the end of 48 weeks
<u>7.c grads</u>	50	20	30

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Available notebooks and textbooks for students to purchase from bookstores.
- Overhead slide projectors, Dias, Microscopes, TV closed circuit, permanent slides and power presentations.

8-2: Recmnded books:

- 1. Roberts, L. S. and J.J. Janovy. 2000. Foundations of Parasitology.5th Edition, W.C.B. Company, U.K.
- 2. Urquhart G. M., J. Armour, J. L. Duncan, A.M. Dunn, F. W. Jennings. 2000. Veterinary Parasitology, Longman Scientific Technical, U.K.
- 3. Soulsby, E. J. L. 1986. Helminths, Arthropods and Protozoa of Domesticated Animals. The English Language Book Society BailliereTindall, London.
- 4. Georgi, J. R., M. E. Georgi and V. J. Theodorides. 1999. Parasitology for Veterinarians. 7th Ed. W.B. Saunder Company London.
- 5. Wall, R. and D. Shearer. 1997. Veterinary Entomology. Chapman and Hall.
- 6. Hendrix, C. M. 1998. Diagnostic Veterinary Parasitology.2nd Edition.Msoby.

8-3: SUGGESTED MATERIALS:

Video tapes and CDs

8.4: web sites and jounrnl

WWW.PubMed.com

○ Parasitic Diseases

<http://www.mic.ki.se/Diseases/c3.html>

○ Ectoparasites and Endoparasites

<http://www.soton.ac.uk/~ceb/EctoEndodirectory/frontectoendo.htm>

○ WHO TDR Home Page <http://www.who.int/tdr/>

○ DPDx -CDCs Division of Parasitic Diseases <http://www.dpd.cdc.gov/dpdx/Default.htm>

○ Parasites and Parasitological Resources <http://www.biosci.ohio-state.edu/~parasite/home.html>



- CDC <http://www.cdc.gov/>
- Atlas of Medical Parasitology <http://www.cdfound.to.it/HTML/atlas.htm>
- David Gibson's Parasitological URLs <http://www.diplectanum.dsl.pipex.com/purls/>
- International veterinary information services (IVIS)
- www.Vet.net.com
- Journal of Parasitology Research
- Advances in Parasitology
- Journal of veterinary Parasitology.

COURSE Ilos matrix

TOPIC	K.U (A)	I.S (B)	P.P.S (C)	G.T.S (D)
Introduction				D1-D2-D3-D4
Helminthes of Theriogenology importance	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
protozoa of Theriogenology importance	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
arthropodes of Theriogenology importance	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Viral infection of Theriogenology importance	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Bacterial and fungal infection of Theriogenology importance	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4
Diagnosis and Control parasites and microbes of Theriogenology importance	A1-A2-A3-A4	B1-B2-B3	C1-C2	D1-D2-D3-D4

Evaluation Ilos matrix:

TOOLS	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	practical	general	
Written examination	A1.A2.A3.A4	B1.B2.B3		D3	50
Oral examination	A1.A2.A3.A4	B1.B2.B3		.D4	20
Practical examination		B3	C1.C2.	D1.D2.	30

Course coordinators:

Name: Prof. Dr. Mahmoud A. Elseify

Head of the department

Name: Prof. Dr. Reda Khalafalla



Kafrelsheikh University
Faculty of Veterinary Medicine



Kafrelsheikh University

Faculty of Veterinary Medicine

**Department of Surgery, Anesthesiology and
Radiology Department**

Program Specification for Master Degree
(2021 - 2022)

Program Title:

Master of The Veterinary Science
(Veterinary Surgery)

A- Administrative information:

- 1- **Awarding Body:** Kafrelsheikh University
- 2- **Teaching Body:** Faculty of Veterinary Medicine
- 3- **Department(s) responsible:** Surgery, anesthesiology and Radiology
- 4- **Programme Title:** Diploma of Veterinary Surgery
- 5- **Final award:** Diploma Degree
- 6- **Registration period:** One year
- 7- **Program Coordinator:** Prof. Dr. Gamal Elsayad
- 8- **External evaluator**

B- Professional information:

1- Aim of the Programme:

- The aim of the course is to provide the postgraduate students with a basic education in the field of veterinary surgery. Also, to enable them to gain first the experience in collecting information from different sources, develop research skills.
- A Good grade in Diploma can serve as a basis for admission to Master study in veterinary science thereafter.

2- Academic standards:

Adapted by the faculty committee for formulating the academic standard for post-graduate using the generic guidelines for post-graduate adapted by NAQAAE.
Academic reference standards (ARS) adopted by the faculty committee No 1(14/9/2014)

3-Graduate attributes:

At the end of the program, graduate must be able to:

- 3.1. Apply the gained specific knowledge and the relevant ones in veterinary surgery.
- 3.2. Identify the surgical conditions and suggest solutions of the focus area.
- 3.3. Show satisfactory interpersonal and communication skills in his professional practice

- 3.4. Communicate effectively and lead work team through professional scale.
- 3.5. Make decision according to the available information.
- 3.6. Use of the available resources efficiently.
- 3.7. Awareness with his role in society development and community preservation.
- 3.8. Reflects the commitment to act with integrity, credibility, and the rules of profession
- 3.9. Realize the importance of self and life-long learning.

4-Programme ntended learnng outcomes

A. Knowledge and understanding:

On successful completion of this programme, graduate will be able to:

- a.1. Define basic principles and practice of Surgery, Anesthesiology and Radiology.
- a.2. Recognize Legal and ethical principles of dealing with diseased patients and owner.
- a.3. Outline basics and principles of quality assurance in professional practice in the Veterinary surgery room.
- a.4. Recognize the influence of surgery room cleaning and sterilization and surgery room hazards disposal on surrounding environment and methods to maintain clean environment.

B. Intellectual skills:

At the end of the program, the graduate must be able to:

- b.1. Analyze case history, clinical findings to reach the perfect diagnosis of surgical affections.
- b.2. Select the appropriate intervention for each surgical condition.
- b.3. Relate between different results in the recently published scientific papers in surgery field.
- b.4. Assess risk for intra-operative procedures.
- b.5. Judge post-operative complications.
- b.6. Select the right decision for cases of complications after surgery.

C. Practical and professional skills:

At the end of the program, the graduate must be able to:

- c.1. Master the basic practical skills in Surgery, Anesthesiology, Radiology, Surgical anatomy and Surgical Pathology.
- c.2. Follow up surgical case.

c.3. Write case report and Follow-up chart.

D. General and transferable skills:

At the end of the program, graduate must be able to:

- d.1. Communicate efficiently with teaching staff, colleagues and the community
- d.2. Utilize information technology in scientific research and publications.
- d.3. Update information and knowledge and exchange it with staff and colleagues.
- d.4. Identify and use different sources of information and knowledge in veterinary surgery and other related topics.
- d.5. Respect the importance of team work and do good control of time.
- d.6. Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team.
- d.7. Use the tools important for self and continuous learning.

5. Programme structure

This is a one-year programme .There are 4 courses run over a year (**Refer to the programme regulation for the full list of the higher studies of the faculty of veterinary medicine, Kafrelsheikh University**).

Graduate Diploma programme courses

Course title	No of hours/week	
	Lecture	Practical Lab
Animal surgery	2	2
Radiology	1	1
Anesthesiology	1	1
Applied Anatomy	2	2
Surgical Pathology	2	2
Total	8	8

6-Teaching and Learning Methods:

The program features a variety of teaching approaches for different intended learning objectives, including lectures, practical and lab sessions, and seminars.

7- Student assessment:

The program courses depends on different assessment ways:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
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2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills

Assessment of program intended learning outcomes

Tool or method	ILOs			
	K & U (a)	I.S (b)	P.P (c)	G.T (d)
Written	1-4	1,2,4,5,6		1-7
Oral	1-4	1,3,4		1-7
Practical		1,2,	1-3	1-7

8-Marking scale as follow:-

Grade		Percentage
Excellent		> 90
Very good		>80
Good		>70
Pass		>60
Fail	Weak	45 to less than 60
	very weak	Less than 45

9-Evaluation of program outcomes

Code	Evaluator	Tools	Sample
1	Postgraduate students	Questioners	20%
2	Stakeholder	Questioners & Open discussion	10
3	Alumni	Questioners	15
4	External examiners	report	1
5	External evaluators	report	1

10. Program Admission Requirements:

Applicant must normally satisfy the Faculty of Veterinary Medicine University of Kafrelsheikh general entrance and requirement.

- The applicant must have regular attendance in his courses according to the schedule of the faculty.

11. Regulations for progression of program

- a) Registration period for the Diploma in veterinary medicine sciences is one year after the approval date by the Faculty council, and it should not exceed a period of two years.
- b) The student should conduct the courses proposed by both department council and approved by postgraduate and research committee and faculty council (article 32) in regulation law list and the student will entitled to apply for the exam. Only after meeting attendance rate for each courses.
- c) The student should pass written, practical and oral exams successfully in all courses, and the grade will be estimated according to in regulation law list.
- d) The Faculty council has the right to deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- e) Registration will be during September of each year.
- f) Failure in or depriving from entering one or more course did not requires reexamination of successful passed courses.

12-Examination Regulations

- a- Time of written exam, 3 hours for each course that has 3 hours or more for lecture / practical /week. **If has less than 3 hours/week, the time of exam, is 2 hours only.**

The final degree of each course which has 3 hours (lecture and practical) per week is **100 and less than 3 hours is 50 degrees and divided into 50% for written exam, and 50% for practical and oral exam**

12-Programme completion:

- Successfully completion of the required courses.

Program co-ordinator
Prof.dr. magdy seleem

Head of the department
prof.dr. mohammed marzok

Matching program ILOs with ARS - Matrix

Prog ILOs	ARS																	
	K&U (a)				I.S. (b)					P.P. (c)		G.T. (d)						
	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7
K&U	1	2	3	4														
I.S.					1	2	3	4	5,6									
P.P.										1,2	3							
G.T.												1	2	3	4	5	6	7

Program Specification Matrix

Diploma of Veterinary Surgery

Courses Name	Total Contact hours/ course	No. of Weeks	No. of hours / week			K.U (a)				I.S (b)						P.P (c)			G.T (d)						
			Lect.	Lab.	Total	1	2	3	4	1	2	3	4	5	6	1	2	3	1	2	3	4	5	6	7
Animal surgery	192	48 weeks	2	2	4	X		X	X	X	X		X	X	X	X	X	X	X	X	X		X	X	
Radiology	96		1	1	2	X	X		X			X	X	X		X			X	X		X	X	X	X
Anesthesiology	96		1	1	2	X		X	X		X	X			X	X		X	X	X		X		X	X
Applied Anatomy	192		2	2	4	X				X			X			X			X	X	X		X	X	X
Surgical Pathology	196		2	2	4		X			X	X				X	X	X	X	X	X		X	X	X	X
Total	768		8	8	16																				



ARS for Diploma in Veterinary Surgery

Graduate attributes

At the end of the program, graduate must be able to::

- 1) Apply the gained specific knowledge and the relevant ones in veterinary surgery.
- 2) Identify the surgical conditions and suggest solutions of the focus area.
- 3) Show satisfactory interpersonal and communication skills in his professional practice
- 4) Communicate effectively and lead work team through professional scale.
- 5) Make decision according to the available information.
- 6) Use of the available resources efficiently.
- 7) Awareness with his role in society development and community preservation.
- 8) Reflects the commitment to act with integrity, credibility, and the rules of profession
- 9) Realize the importance of self and life-long learning.

A) Knowledge and understanding

Adopted ARS		NARS (Diploma)	
	<i>By the end of this program the graduate should understand and accommodate the following:</i>		<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Basic principles and practice of Surgery, Anesthesiology and Radiology.		Basics, theories and specific knowledge in educational field and sciences related to professional practice
2)	Legal and ethical principles of dealing with diseased patients and owner.		Ethical and legal principles related to professional practice

3)	Application of quality standards in the Veterinary surgery room.	Basics and principles of quality assurance in professional practice in the field of specialization
4)	Basics of surgery room cleaning and sterilization and surgery room hazards disposal on surrounding environment and methods to maintain clean environment.	Impact of professional practice on environment and work to preserve and maintain the environment

B) Intellectual skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Analysis and interpretation of different findings to reach the perfect diagnosis of surgical affections	Determination and analysis of professional problems in the field of specialization and arranging them according to priorities
2)	Line the appropriate intervention for each surgical condition.	Solving professional problems in specialization field
3)	Evaluating different results in the recently published scientific papers in surgery field.	Analytical reading of researches and scientific topics in the field of specialization
4)	Monitoring the intra-operative procedures and observe post-operative complications.	Risk assessment in professional practice.
5)	Using appropriate intellectual strategy and evidence based decisions to deal with cases of complications after surgery	Professional decision making using available information

C) Professional and practical skills

Adopted ARS		NARS (Diploma)
	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Performing the basic practical skills in anesthesiology, surgery and Radiology.	Applying professional skills in the field of specialization
2)	Writing professional case reports and follow-up chart with interpretation of data according to the normal reference values	Writing professional reports

D) General and transferable skill

Adopted ARS	NARS (Diploma)
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	<i>By the end of this program the graduate should understand and accommodate the following:</i>	<i>By the end of this program the graduate should understand and accommodate the following:</i>
1)	Effective communication with teaching staff, colleagues and the community	Effective communication
2)	Utilizing information technology in scientific research and publications.	Utilizing information technology to serve development of professional practice.
3)	Updating information and knowledge and exchange it with staff and colleagues.	Self-assessment and determination of personal educational needs.
4)	Identifying and using different sources of information and knowledge in clinical pathology and other related topics	Using different resources to obtain knowledge and information.
5)	Respecting the importance of team work and do good control of time.	Working in team and efficient time management.
6)	Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team	Leading a team in familiar professional contexts.
7)	Using the tools important for self and continuous learning	Self and continuous learning

أولاً: برامج دبلومه الدراسات العليا

١ - مواصفات الخريج

خريج برنامج دبلومه الدراسات العليا في أي تخصص يجب أن يكون قادراً على:

١. تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
٢. تحديد المشكلات المهنية و اقتراح حلولاً لها
٣. إتقان المهارات المهنية واستخدام الوسائل التكنولوجية المناسبة في ممارسته المهنية
٤. التواصل و قيادة فرق العمل من خلال العمل المهني المنظمي
٥. اتخاذ القرار في ضوء المعلومات المتاحة
٦. توظيف الموارد المتاحة بكفاءة
٧. الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة
٨. التصرف بما يعكس الالتزام بالنزاهة و المصداقية و قواعد المهنة و تقبل المسائلة و المحاسبة

٩. إدراك ضرورة تنمية ذاته و الانخراط في التعلم المستمر

٢ - المعايير القياسية العامة

١ المعرفة و الفهم. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على فهم و

استيعاب كل من:

أ - النظريات و الأساسيات و المعارف المتخصصة في مجال التعلم وكذا العلوم ذات العلاقة بممارسته المهنية

ب - المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص

ج - مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص

د - تأثير لممارسة المهنية على البيئة و العمل على الحفاظ على البيئة و صيانتها

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٢ المهارات الذهنية. ٢

بانتهاج دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادراً على:

أ - تحديد و تحليل المشاكل في مجال التخصص و ترتيبها وفقاً لأولوياتها

ب - حل المشاكل المتخصصة في مجال مهنته

- ج- القراءة التحليلية للأبحاث و المواضيع ذات العلاقة بالتخصص
د- تقييم المخاطر في الممارسات المهنية
هـ- اتخاذ القرارات المهنية في ضوء المعلومات المتاحة
٣ المهارات المهنية. ٢

بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
أ- تطبيق المهارات المهنية في مجال التخصص
ب- كتابة التقارير المهنية
٤ المهارات العامة و المنقولة. ٢

بانتهاء دراسة برنامج دبلومه الدراسات العليا يجب أن يكون الخريج قادرا على:
أ- التواصل الفعال بأنواعه المختلفة
ب- استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية
ج- التقييم الذاتي و تحديد احتياجاته التعليميه الشخصية
د- استخدام المصادر المختلفة للحصول على المعلومات و المعارف
هـ- العمل في فريق وإدارة الوقت
و- قيادة فريق في سياقات مهنية مألوفة
ز- التعلم الذاتي و المستمر

KAFR ELSHEIKH UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPARTMENT OF SURGERY ANESTHESIOLOGY AND RADIOLOGY

**Course specification
(2021 / 2022)**

1 - Basic Information:

Code number.....

Course title: **Animal surgery**

Academic Year: *Diploma Degree of Veterinary SURGERY*

Total teaching hours: 192hrs

Lectures: **96 hrs**

Practical: **96 hrs**

2 - OVERALL AIMS OF THE COURSE:

The aim of the course is to provide the postgraduate students with a basic education in the field of Regional veterinary surgery as well as Veterinary Radiology. Also to enable them to gain first the experience in collecting information from different sources, develop research skills, competency in modern laboratory technology and provide the students with skills in interpretation of published literature to prepare them to incorporate and integrate new developments into research and clinical activities.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

A1 Recognize the basic knowledge about surgical anatomy of different systems

A2 Identify the basis of diagnosis, differential diagnosis and treatment of different surgical affections and their differential diagnosis

A3 Basis of how can write a thesis and research proposal

A4 Realize the basis of radiology and ultrasonography.

A5 Identify the different ultrasonographic artifacts.

A6 Familiarize of different factors affecting the details contrast and density of the radiographic film.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

B1-Collect the information about the surgical affections of all animal species.

B2-Assess the current methods of diagnosing such surgical affections.

B3-Evaluate the ways chosen to solve such surgical problems

B4 Interpret the veterinary radiology and ultrasonographic images.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

C1-Apply knowledge and understanding of the surgical affections during handling an animal.

C2-Make different types of bandage for farm animals and pets.

C3-Show ability to deal with all types of wounds.

C4-Perform some basic surgical operations for the common surgical affection and musculoskeletal system disorders.

C5-Explore the postoperative precautions for preventing infection and achievement of good healing without complications.

C6-Perform the veterinary radiology films and ultrasonographic examination

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1-Improve communication, teamwork, decision-making and time management skills during surgery.

D2-Efficiently make use of library facilities and IT tools.

D3-Improve computer skills including Microsoft word, excel, spreadsheets, presentation packages and graph plotting.

D4-Develop written assignments and oral presentations skills.

4 - COURSE CONTENTS:

Topics	No. of hours	Lecture	Practical
Surgery of Respiratory System	12	8	4
Surgery of Digestive System	16	8	8
Hernias	10	5	5
Surgery of the ear & horn	6	3	3
Surgery of the wither & back	6	3	3
Surgery of Urinary system	10	6	4
Surgery of the male Genital System	10	6	4
Surgery of the Female genital system	10	6	4
Veterinary Ophthalmology	12	6	6
X-ray Machine and Production of x-ray	4	2	2
X-ray Beam	4	2	2
X-ray Image	4	2	2
Dark Room and Radiographic Processing	4	2	2
Detail, Density and Contrast	4	2	2
Radiation Hazards and Protection	4	2	2
Special Radiographic Procedures	4	2	2
Radiographic Interpretation	4	2	2
Digestive System	6	3	3
Urinary System	6	3	3
Male Genital System	6	3	3
Female Genital System	6	3	3

Chest	4	2	2
Extremities	10	5	5
Joints	10	4	6
Principles of diagnostic ultrasound & ct	10	4	6
Clinical application of Ultrasonography & Ct	10	6	4
Total	192	96	96

5- TEACHING & LEARNING METHODS:

*Lectures

(using data show, white board, overhead projector and brain storming)

*Practical and small group sessions:

- 1: Practical training (Practical demonstrations, practice of skills, and discussions)
2. Teaching hospital admitted cases

* Self learning

- Computer researches and faculty library visits to prepare essays and presentations.
 - Library researches.
 - Internet researches.
 - Discussion in the researches.
 - Preparation of posters
 - Preparation of scientific reports.

* Audiovisual

Video show

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-

*Activation of office hours.

*Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written exam	Oral exam	Practical exam
<u>7.b time</u>	AT the end of the academic year	AT the end of the academic year.	AT the end of the academic year
<u>7.c grads</u>	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- **Department notes:** available for students to purchase from the department.

8-2: Recmended books:

8.2A Equine Surgery 2011 Jörg A. Auer, and John A. Stick

8.2B Manual of equine anaesthesia and analgesia Doherty, T. J. 2006

8.2.C Handbook of Equine Anaesthesia 2nd ed. 2007 Taylor

8.2.D Wright's Veterinary anaesthesia 1984

8.2.E Veterinary anaesthesia, William V. Lumb, 3rd edition, 1996

8.2.F Veterinary anaesthesia, I.W. Hall, K.W. Clarke, 10th edition 2001

8-3: SUGGESTED books:

8.3.A Dollar's Veterinary Surgery J.J O'Connor 1982

8.3.B Veterinary Surgery 1980 E. R Frank

8.3.C Current Concepts in Veterinary Surgery 1985 K. Fouad, M.Saleh and M.Shokry.

8.3.D Equine Surgery, Auer, JA and Stick, JA 1999.

8.3.E Technique of large Animal Surgery, 2nd ed. A. Simon Turners, AS

8.3.F Radiography in veterinary technology, 4th edition, Lisa .M. Lavin, MBA, CVT, 2007

8.4: Web sites and journals

- Journal of Veterinary Surgery
- American Journal of Veterinary Medical Association
- American Journal of Veterinary Research
- Veterinary Record

<http://www3.interscience.wiley.com>

<http://www.ecvs.org/>

<http://cvm.msu.edu/>

<http://www.millhousevets.co.uk/>

<http://www.vsbwa.org.au/>

Course content ILOs Matrex:

Topic	KU	IS	PP	GTS
Surgery of Respiratory System	A1-A3	B1-3	C1,4,5	D1-4
Surgery of Digestive System	A1-A3	B2	C1,4,5	D1-4
Hernias	A1-A3	B3	C1,4,5	D1-4
Surgery of the ear & horn	A1-A3	B2	C1,4,5	D1-4
Surgery of the wither & back	A1-A3	B3	C4	D1-4
Surgery of Urinary system	A1-A3	B3	C4	D1-4
Surgery of the male Genital System	A1-A3	B2	C1,4,5	D1-4
Surgery of the Female genital system	A1-A3	B2	C1,4,5	D1-4
Veterinary Ophthalmology	A1-A3	B1	C1	D1-4

X-ray Machine and Production of x-ray	A4-6	B4	C6	D1-4
X-ray Beam	A4-6	B4	C6	D1-4
X-ray Image	A4-6	B4	C6	D1-4
Dark Room and Radiographic Processing	A4-6	B4	C6	D1-4
Detail, Density and Contrast	A4-6	B4	C6	D1-4
Radiation Hazards and Protection	A4-6	B4	C6	D1-4
Special Radiographic Procedures	A4-6	B4	C6	D1-4
Radiographic Interpretation	A4-6	B4	C6	D1-4
Chest	A1-3	B1-3	C1,4,5	D1-4
Extremities	A1-3	B3	C2,3	D1-4
Joints	A1-3	B2	C2,3	D1-4
Principles of diagnostic ultrasound & ct	A4-6	B4	C6	D1-4
Clinical application of Ultrasonography & Ct	A4-6	B4	C6	D1-4

Assessment ILOs Matrix:

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	General	
Written examination	A1.A2.A3.A4.A5.A6	B1		D2,3,4	25
Oral examination	A1.A2.A3.A4.A5.A6	B1.B2.B3.B4		D1	25
Practical examination		B1.B2.B3	C1.C2.C3. C4.C5,C6	.D1	25

Course Coordinator:

Head of Department:

KAFR ELSHEIKH UNIVERSITY
FACULTY OF VETERINARY MEDICINE
DEPARTMENT OF SURGERY

Course specification

(2021 / 2022)

1 - Basic Information:

Code number.....

Course title: **Veterinary Anaesthesiology**

Academic Year: *Diploma Degree of Veterinary SURGERY*

Total teaching hours: 96hrs

Lectures: **48 hrs**

Practical: **48 hrs**

2 - OVERALL AIMS OF THE COURSE:

This course aimed to enable the postgraduate students to gain first the experience in collecting information from different sources, develop research skills, competency in modern laboratory technology and provide the students with skills in interpretation of published literature to prepare them to incorporate and integrate new developments into research and clinical activities. Upon successful completion of this course, the graduates should be able to demonstrate knowledge about the different anesthetic protocols in different animals and professionally and independently able to apply the appropriate anesthetic protocol for different animals in specific circumstances.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1. Summarize different anesthetic regimen for different animal species.
- A2. Discuss the various anesthetic procedures of each animal species.
- A3. Identify the different anesthetic procedures of such conditions or diseases.
- A4. List different types of Anesthetic drugs.
- A5. Describe the most suitable anesthetic regimen for each species.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1. Design anesthetic regimen for each case.
- B2. Interpret the obtained information about each case especially anesthetic risk patients.
- B3. Assess and judge the used methods of anesthetizing the animals.
- B4. Estimate the ways chosen to anesthetize animal for surgical problems.
- B5. Score the anesthetic regimen.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1. Apply the recent techniques necessary to anesthetize different animals.

- C2. Carry out different anesthetic protocol like local, regional or general anesthesia suitable for each species and for each clinical case
 C3. Operate the Anesthetic machine effectively.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1- Perform group working , good management and problem solving ability.
 D2- Conduct good communications.
 D3- Use new technology and has the ability of self learning.
 D4- Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

Topic	No. of hours	Lecture	Practical
Local analgesia	12	6	6
Prineural analgesia about the head	12	6	6
Prineural analgesia about the limb	12	6	6
Prineural analgesia about the trunk.	12	6	6
Spinal analgesia	12	6	6
Narcosis	12	6	6
Premedications	12	6	6
General anesthesia	12	6	6
Total	96	48	48

5- TEACHING & LEARNING METHODS:

***Lectures**

(using data show, white board, overhead projector and brain storming)

***Practical and small group sessions:**

1: Practical training.

(Practical demonstrations, practice of skills, and discussions)

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- Preparation of posters
- Preparation of scientific reports.

*** Audiovisual**

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
- *Activation of office hours.
- *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
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7.b time	During December following the end of premaster year	During December following the end of premaster year	AT the end of the premaster year
7.c grads	25	10	15

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- **Department notes:** available for students to purchase from the department.

8-2: Recommended books:

- Manual of equine anaesthesia and analgesia Doherty, T. J. 2006
- Handbook of Equine Anaesthesia 2nd ed. 2007 Taylor
- Wright's Veterinary anaesthesia 1984
- VETRINARY ANETHESIA, WILLIAM V. LUMB , 3rd edition, 1996
- VETRINARY ANESTHESIA, L.W.HALL K.W.CLARKE, 10th edition 2001

8-3: SUGGESTED books:

- Manual of equine anaesthesia and analgesia Doherty, T. J. 2006

Course content ILOs Matrex:

Topic	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Local analgesia	A1- A5	B1 - B5	C1 - C3	D1 - D4
Prineural analgesia about the head	A1-A5	B1 - B5	C1 -C3	D1 - D4
Prineural analgesia about the limb	A1-A5	B1 - B5	C1 - C3	D1 - D4
Prineural analgesia about the trunk.	A1-A5	B1 - B5	C1 - C3	D1 - D4
Spinal analgesia	A1-A5	B1 - B5	C1 - C3	D1 - D4
Narcosis	A1-A5	B1 - B5	C1 - C3	D1 - D4
Premedications	A1-A5	B1 - B5	C1 - C3	D1 - D4
General anesthesia	A1-A5	B1 - B5	C1 - C3	D1 -D4

Assessment ILOs Matrix:

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	general	
Written examination	A1- A5	B1 - B5		D3	25
Oral examination	A1-A5	B1 - B5		D2 , D4	10
Practical examination		B1 - B5	C1 - C3	D1	15

Course Coordinator:

Head of Department:

Dr. Alaa Ghazy Soliman

Prof. Dr. Gamal Elsayad

Course specification (2021 / 2022)

1 - Basic Information:

Course title: Surgical Anatomy

Code number:

Academic Year: Diploma of veterinary Surgery Programme

Total teaching hours: 192 hrs

Lectures: 96 hrs

Practical: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

By the end of the course, Master students should be able to:

- Gain basic knowledge and detailed information about the topographic, applied and surface anatomy in domestic animals with reference to the structures that can be examined through body surface in addition to the nerves associated topographically to surface anatomy which give them an appropriate background about how to deal with the animal during surgical intervention.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1- Define the anatomical terms used in topographical and surface anatomy.
- A2- Identify the different regions of the body in relation to the surface of the body.
- A3- Memorize the sites of the important bony landmarks.
- A4- Describe the sites of surgical operation in the body of animals.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1- Determine the specific organs in relation to the surface of the body.
- B2- Select the normal position of different organs and how they can be displaced.
- B3- Relate the surface nerve supply to the physiological functions.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1- Employ recent techniques and tools adopted to evaluate the different body region through topographic, applied and surface anatomy knowledge on the living animals.
- C2- Apply techniques associated with determination of sites of bony landmarks and emergence of nerves.
- C3- Dissect skin and superficial nerve supply.
- C4- Detect the area for blood supply for surface anatomy.

3- D: GENERAL and transferable SKILLS:

By the end of studying the course, the graduate should be able to:

- D1- Perform group working , good management and problem solving ability.
 D2- Conduct good communications.
 D3-Use new technology and has the ability of self learning.
 D4- Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

SNO.	TOPIC	Total hours	Hours for lecture	Hours for practical
1	Topographical, applied and surface anatomy of the head and neck	50	25	25
2	Topographical, applied and surface anatomy of the thorax	46	22	24
3	Topographical, applied and surface anatomy of the abdomen	46	24	22
4	Topographical, applied and surface anatomy of the limbs	50	25	25
	Total	192	96	96

5- TEACHING & LEARNING METHODS:

***Lectures**

using data show.

***Practical and small group sessions:**

Practical demonstrations, practice of skills and discussions

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- Audiovisual (video show).

6. METHODS FOR STUDENTS With limited capabilities:-

No disabled students until now, but if present the staff members in the department plan to held several meetings with the students to face any difficulties that meet the students.

7. STUDENT ASSESSMENT:-

7.a. Used methods	Written examination	oral examination	Practical examination
7.b. Time	During December following the end of academic year	During December following the end of academic year	following the end of academic year
7.c. Grades	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Text books in Anatomy available in library of the faculty.
- Overhead projections, data show, and computer presentations used during teaching.

8-2: Recmended books:

- Dyce, K.M; Sack, W.O. and Wensing C.J.G. 4th Ed., (2009). Text book of Veterinary Anatomy. Saunders Publ. Co.
- König, H.E., Liebich, H. (2006): Veterinary Anatomy of Domestic Mammals, Manson Publishing Ltd; 3rd Edition.
- Budras, K., Sack, W. O. and Röck, S. (2009): Anatomy of the horse. Fifth, revised Edition. Schlütersche Verlagsgesellschaft. Hans-Böckler-Alle 7, 30173 Hannover.
- Getty, R. (1975). Sisson and Grossman's The Anatomy of the Domestic Animals volume 1. 5th edition, W B Saunders.
- Nickel, R., Schummer, A., Seiferle, E. / Paul Parey (1981). The Anatomy of the Domestic Animals.
- De Lahunta, A and Habel, R. E. (1986). Applied Veterinary Anatomy. W.B. Saunders Company. ISBN 0-7216-1431-0.
- Evans, H. E. and de Lahunta, A. (2010): Guide to the dissection of the dog. 7th Ed. Elsevier's Health Sciences Rights Department in Philadelphia, Saunders. PA, USA.

8-3: SUGGESTED books:

- Saunders Veterinary Anatomy Flash Cards, Saunders; 1 Crds edition (2009).
- An Illustrated Guide to Veterinary Medical Terminology, Janet Amundson Romich, Delmar Cengage Learning; 3rd edition (2008).
- Boyd, J.S. (1991): Color Atlas Of Clinical Anatomy Of The Dog and Cat. St. Louis, Mosby. Year book

8.4: web sites and jouranlsand so on

- World Association of Veterinary Anatomists
- Anatomia Histologia Embryologia
- Anatomical Record
- Journal of Anatomy
- Journal of Veterinary Anatomy
- Cells, tissues and organs
- Journal of Developmental Biology
- Journall of Morphology

9.1. Course content ILOs Matrix:

TOPIC	K.U (A)	IS (B)	P.P.S (C)	G.T.S (D)
Topographical, applied and surface anatomy of the head and neck	A1 -A4	B1 - B3	C1 - C4	D1 -D4
Topographical, applied and surface anatomy of the thorax	A1 -A4	B1 - B3	C1 - C4	D1 - D4
Topographical, applied and surface anatomy of the	A1 - A4	B1 - B3	C1 - C4	D1 - D4

abdomen				
Topographical, applied and surface anatomy of the limbs	A1 - A3	B1, B3	C1 - C4	D1 - D4

9.2. Assessment ILOs Matrix:

Methods	I.L.O.S Evaluation			Marks allocated
	Knowledge	Intellectual	Practical	
Written examination	A1 - A4	B1 - B3	-	50
Oral examination	A1 - A4	B1 - B3	-	25
Practical examination	-	B1, B2	C1 - C4	25

Course Coordinator:

Head of Department:

Dr. Mohammed Rizk El-Ghannam

Dr. Mohammed Rizk El-Ghannam

Course specification (2021 / 2022)

1 - Basic Information:

Code number
Course title: **Surgical Pathology**
Academic Year: Diploma programs (Vetrinary surgery)
Total teaching hours: 192 hrs
Lectures: 96hrs
Practical: 96 hrs

2 - OVERALL AIMS OF THE COURSE:

Upon successful completion of the course, the student will be able to:

- ❖ Recognize and evaluate pathological changes resulting from wounds, fractures, abcess and bursa.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1- Be aware with the basic pathologic terminology for common surgical lesions.
- A2- Discuss the stages of different lesions related to the field of surgical pathology depending on the pathogenesis.
- A3- Identify the macro- and microscopical alterations induced by injuries and cancer.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1- Analyze the gross and microscopical findings of different surgical lesions.
- B2- Link the different clinical data with the microscopical findings to get appropriate interpretations of surgical lesions.
- B3- Analyze new methods of tissue processing and staining in order to increase professional performance.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1- Apply accurate and effective PM examination of carcasses.
- C2- Determine tissue specimens for pathological diagnosis of diseases.
- C3- Perform aspiration smear techniques.
- C4- Use the macro- and microscopical findings and present them in a proper pathological report.

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

- D1- Coach and work in groups.
- D2- Classify different duties
- D3- Utilize computer and internet skills.
- D4- Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

TOPIC	Total hours	Hours for lecture	Hours for practical
Special Diagnostic Techniques in Surgical Pathology	48	24	24
Inflammation and Repair	48	24	24
Oncology	48	24	24
Surgical pathological affections in different body organs	48	24	24
Total	192	96	96

5- TEACHING & LEARNING METHODS:

***Lectures:**

using data show, white board and over head projector.

***Practical and small group sessions:**

Practical training: Practical demonstrations, practice of skills, and discussions.

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

Histopathological Drawings.

Library researches.

Internet researches.

Discussion in the researches.

Preparation of scientific reports.

*** Audiovisual**

Television circle in the practical laboratory.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	One examination at the end of the academic Year	One examination at the end of the academic Year	One examination at the end of the academic Year
<u>7.c grads</u>	50	25	25

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Practical Department Notes: available for students to purchase from the department.*
- Microscopes, slides, projector slides, Data show.

8-2: Recmended books:

- Differential Diagnosis in Surgical Pathology. Paolo Gattuso, MD, Vijaya B. Reddy, MD, Odile David, MD, Daniel J. Spitz, MD, and Meryl H. Haber, MD.

8-3: SUGGESTED books:

- Robbins & Cotran Pathologic Basis of Disease. Vinay Kumar, Nelso Fausto, Abul Abbas. Saunders; 7 edition, USA, 2004
- Veterinary pathology Textbook. (By Thomas Carlyle Jones, Ronald Duncan Hunt and Norval W. King, - Wiley-Blackwell, U.S.A., 1997).
- Pathology of domestic animals, 4th ed. by Jubb K.V.F., Kennedy P.G. and Palmer N. (1994)

8.4: web sites and journalsand so on

- PubMed
- Science direct
- IVIS
- Environmental Protection Agency (EPA)
- Food and Drug Administration (FDA)
- EPA: Integrated Risk Information System (IRIS)
- J. of comparative pathology
- Vet. Record
- Am.J.of vet.pathology
- Am.J.of vet.med. association
- Teratog. Carcinogen. Mutagen.
- Toxicol. Pathol
- Veterinary Record/IVIS

Intended learning outcomes of each topic

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Special Diagnostic Techniques in Surgical Pathology	A1,A2, A3	B1,B2,B3	C1,C3-	D1-D2-D3- D4
Inflammation and Repair	A2,A3	B2,B3	C1,C2,C3	D1-D2-D3- D4
Oncology	A2,A3	B1,B3	C4	D1-D2-D3- D4
Surgical pathological affections in different body organs	A1,A2	B2,B3	C3	D1-D2-D3- D4

Evaluation of Intended learning outcomes

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	general	
Written examination	A1,A2,A3,A4	B1,B2,B3,B4		D3	50
Oral examination	A1,A2,A3,A4	B4		D4	25
Practical examination		B1,B4	C1,C2,C3,C4	D1,D2,	25

Course Coordinator:

Dr. Walied Sobhy Kotb

Head of Department:

Prof. Dr. Ahmed Elsawak

KAFR ELSHEIKH UNIVERSITY
FACULTY OF VETERINARY MEDICINE
DEPARTMENT OF SURGERY

Course specification (2021/ 2022)

1 - Basic Information:

Code number.....

Course title: **Radiology and ultrasonography**

Academic Year: *Diploma Degree of Veterinary VETERINARY MEDICAL SURGERY*

Total teaching hours: 96hrs

Lectures: 48 hrs

Practical: 48 hrs

2 - OVERALL AIMS OF THE COURSE:

The aim of the course is to provide the postgraduate students with a basic education in the field of veterinary Radiology and ultrasonography. In addition to enable them to gain first the experience in collecting information from different sources, develop research skills, competency in modern laboratory technology and provide the students with skills in interpretation of published literature to prepare them to incorporate and integrate new developments into research and clinical activities.

3 - INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1. State different diagnostic imaging procedures of different body systems for different animal species.
- A2. List diagnostic imaging procedures of different systems.
- A3. Identify the different diagnostic imaging tools.
- A4. Know the most suitable exposure factors.
- A5. List the radiographic and ultrasonographic artifacts

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1. Interpret x-ray films.
- B2. Assess and judge the used methods of radiological examination of the patients.
- B3. Evaluate the articles and collected research papers in veterinary diagnostic imaging.
- B4. Evaluate the current parameters and exposure factors for obtaining diagnostic image.
- B5. Interpret ultrasonic image.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1. Investigate and evaluate the recent techniques necessary to radiological examination of different animals.
- C2. Operate different radiological examination procedures like, X-ray, Ultrasound for each species.
- C3. Operate X-rays machine effectively.

C4. Use the ultrasound machine effectively

3- D: GENERAL SKILLS:

By the end of studying the course, the graduate should be able to:

D1- Perform group working , good management and problem solving ability.

D2- Conduct good communications.

D3- Use new technology and has the ability of self learning.

D4- Develop the ethical behaviors between students and staff members as well as among the students themselves.

4 - COURSE CONTENTS:

Topic	No. of hours	Lecture	Practical
General radiographic terminology	8	8	-
X-ray	44	20	24
Ultrasound	44	20	24
Total	96	48	48

5- TEACHING & LEARNING METHODS:

***Lectures**

(using data show, white board, overhead projector and brain storming)

***Practical and small group sessions:**

1: Practical training.

(Practical demonstrations, practice of skills, and discussions)

*** Self learning**

Computer researches and faculty library visits to prepare essays and presentations.

- Library researches.
- Internet researches.
- Discussion in the researches.
- Preparation of posters
- Preparation of scientific reports.

*** Audiovisual**

Video show.

6. METHODS FOR STUDENTS With limited capabilities:-

- No disabled students until now, but if present the methods are:-
 - *Activation of office hours.
 - *Discussion with them during practical session.

7. STUDENT ASSESSMENT:-

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination
<u>7.b time</u>	During December following the end of premaster year	During December following the end of premaster year	AT the end of the premaster year

<u>7.c grads</u>	25	10	15
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8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- **Department notes:** available for students to purchase from the department.

8-2: Recmended books:

- Manual of equine anaesthesia and analgesia Doherty, T. J. 2006
- Handbook of Equine Anaesthesia 2nd ed. 2007 Taylor
- Wright's Veterinary anaesthesia 1984
- VETRINARY ANETHESIA, WILLIAM V. LUMB , 3rd edition, 1996
- VETRINARY ANESTHESIA, L.W.HALL K.W.CLARKE, 10th edition 2001

8-3: SUGGESTED books:

- Manual of equine anaesthesia and analgesia Doherty, T. J. 2006

Course content ILOs Matrex:

Topic	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
General radiographic terminology	A1 -A4	B1 - B4	-	D1 to D4
X-ray	A1 –A4	B1 - B4	C1 –C3	D1 to D4
ultrasound	A5	B5	C4	D1 to D4

Assessment ILOs Matrix:

Methods	I.L.O.S Evaluation				Marks allocated
	Knowled ge	Intellectu al	Practical	general	
Written examination	A1 - A5	B1 to B5		D3	25
Oral examination	A1 - A5	B1 to B5		D2 , D4	10
Practical examination	-	B1 to B5	C1 - C4	D1	15

Course Coordinator:

Dr. Alaa Ghazy Soliman

Head of Department:

Prof. Dr. Gamal Elsayad