



ARS for PhD in Veterinary Medical Sciences (Histology)

1) **Graduate attributes**

The graduate should have the ability for:

- 1) Mastering the basics and methodologies of scientific research in cytology and Histology with using of different tools
- 2) Performing continuous effort to acquire and add knowledge relevant to laboratory medicine regarding methods and instruments through reading, writing reports and assays or making presentations.
- 3) Analysis and criticization of information in laboratory medicine and related fields including biochemistry, anatomy, physiology, veterinary medicine etc.
- 4) Integrating the laboratory findings with the histologic structure, clinical anatomy and physiology of various organs and extrapolate their interrelationship to obtain correct diagnosis.
- 5) Showing deep awareness with the ongoing problems and modern theories in the field of histopathological diagnosis.
- 6) Identifying the problems in the Cytology and Histology laboratory and select appropriate techniques and methods.
- 7) Mastering of taking different kinds of samples from different species and offer instruction on specimens.
- 8) Develop and introduce new methods and tools into laboratory medicine with their application, validation and diagnostic limitation.
- 9) Using appropriate technological laboratory means to get quick and accurate interpretation of laboratory data and thus correct diagnosis.
- 10) Communicating effectively with histologists, students and colleagues and lead laboratory work team.
- 11) Making decision in different professional situations based on laboratory data.
- 12) Using of the available resources efficiently in the development of new techniques and work to find new resources.
- 13) Being aware with the role of tissue laboratory in diagnosis of animal abnormalities and thus maintenance of animal and human health and therefor the society development and community preservation.
- 14) Acting with integrity and credibility according the ethical rules of laboratory work.
- 15) Realizing the importance of self and life-long learning and progress and transferring his experience to students.

المقررات التي تحقق المعايير الأكاديمية للبرنامج

Code	Name
-	Cytology and histology – basic course
612	General histology (advanced)
613	Histological and Histochemical structure of blood and Cardiovascular system (advanced)
614	Histological and Histochemical structure of Respiratory System (advanced)
615	Histological and Histochemical structure of Digestive System (advanced)
616	Histological and Histochemical structure of Urogenital System (advanced)
617	Histological and Histochemical structure of Nervous System and Endocrine glands (advanced)
618	Histological and Histochemical structure of Integument, Hoof, Claws and nails (advanced)
619	Avian Histology (advanced)
620	Histological and Histochemical structure of Circulatory and immune system (advanced)

مقارنة ما يقدمه البرنامج من نتائج تعليمية مستهدفة مع المعايير المرجعية القياسية

A) Knowledge and understanding

Adopted ARS		NARS (PhD)
	<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)	Recent theories, principles and knowledge in the field of cytology and histology, histochemistry and immunohistochemistry.	Recent theories, principles and knowledge in the field of specialization and related areas
2)	Principles methodologies and ethics of scientific research regarding laboratory medicine.	Basics, methodologies and ethics of scientific research and its different tools
3)	Legal and ethical principles of cytology and histology, laboratory regulations and safety (hazards, precautions, protective instruments).	Legal and ethical principles of professional practice in the area of specialization
4)	The principles and the basics of quality assurance in the cytology and histology laboratory such as instrumentation, automation and calibration.	Principles and the basics of quality assurance in the area of professional practice in the field of specialization
5)	Awareness with the effect of good and accurate laboratory work on the environment and environmental development through accurate diagnosis of animal diseases and maintenance of animal and human health.	Awareness with the effect of professional practice on the environment and methods of its maintain and development

B) Intellectual skills

Adopted ARS		NARS (PhD)
	<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 evaluate laboratory findings and integrate results with other clinical information to elicit proper interpretation.	Analyzing and evaluating information in the field of specialization and the eliciting from them
2)	Solve diagnostic problems based on available laboratory data.	Solving professional problems using available data
3)	Plan scientific research studies in the field of histology laboratory diagnosis including new approaches, methods and applications that can manage problems through laboratory diagnosis.	Conducting scientific research studies that add to knowledge
4)	Formulate scientific papers efficiently through collecting, analyzing and interpreting data and developing evidence based learning and practice.	Formulating scientific papers
5)	Assess risks in the laboratory work regarding improper use of some instruments or handling samples of tissues.	Risk-assessment in the field of specialization
6)	Plan to improve performance in cytology and histology laboratory work.	Planning to enhance the performance in field of specialization
7)	Take safe clinical decisions pertaining to clinical Pathology services particularly in complex and unpredictable situations.	Making professional decisions under different professional contexts
8)	Show innovative and creative skills in clinical laboratory practice, professional learning and scientific endeavor.	Creation and innovative in the area of specialization
9)	Discuss the laboratory results and lead scientific open discussion in relation to cytology and histology based on evidences and proofs.	Dialogue and discussion based on evidences and proofs

C) Professional and practical skills

Adopted ARS		NARS (PhD)
	<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)	Mastering basic and modern laboratory skills in cell biology, histology, histochemistry and related techniques	Mastering basic and modern professional skills in the area of specialization
2)	Writing laboratory report including the normal histologic structure of the studied organ	Writing and evaluating professional reports
3)	Evaluating and modernizing methods and	Evaluating and modernizing methods

	instruments in cytology and histology laboratory to ensure quick and accurate interpretation.	and tools in the area of specialization
4)	Using different laboratory techniques properly and analyze laboratory reports in algorism manner to get correct diagnosis.	Using modern technological means to serve professional practice
5)	Planning for the improvement of laboratory practice through introduction of new methods and techniques and developing performance of others by training.	Planning for the improvement of professional practice and developing performance of others

D) General and transferable skills

Adopted ARS		NARS (PhD)
	<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 in different ways with teaching staff, colleagues and community.	Effective communication
2)	Utilize information technology to serve histologic laboratory work.	Utilizing information technology to serve development of professional practice
3)	Teach others and evaluate their performance.	Teaching others and evaluating their performance
4)	Asses himself and life-long learning.	Self-assessment and continuous learning
5)	Use library, computer and other resources to acquire, apply and disseminate scientific knowledge.	Using different resources to obtain knowledge and information
6)	Work in a team and lead team under different professional circumstances.	Team working and leading a team in familiar professional contexts
7)	Manage scientific meetings with the ability to manage time efficiently.	Management of scientific meetings with the ability to manage time efficiently