



ARS for PhD in Veterinary Medical Sciences (Genetics and Genetic Engineering)

1) **Graduate attributes**

The graduate should have the ability for:

- 1) Mastering the basics and methodologies of scientific veterinary genetics and genetic engineering for better dealing with fertility and productive genetic problems professionally.
- 2) Performing continuous effort to add knowledge about genetic improvement of productive and reproductive efficiency of animals and poultry.
- 3) Analysis and cartelization of information in animal and poultry genetics and related fields including biochemistry, production, physiology, etc.
- 4) Integrating data collected from the animal and poultry farms with related experimental findings to diagnoses genetic diseases.
- 5) Showing deep awareness with the ongoing genetics and genetic engineering problems and modern theories in solving genetic problems.
- 6) Identifying the main genetic causes of low production and infertility in animals and poultry farms and suggesting the appropriate solutions.
- 7) Mastering of a wide range of professional skills in experimental design, data collection, analysis, and interpretation of productive and reproductive data.
- 8) Acquiring trends towards developing modern methods and tools in genetics and genetic engineering Using appropriate technological means to serve professional practice.
- 9) Communicating effectively with animal breeders, students and colleagues and leading work team through professional scale.
- 10) Making decision in different professional situations especially under field conditions to deal with genetics and genetic engineering
- 11) Using of the available resources efficiently in the development of new techniques and work to find new resources.
- 12) Being aware with his role in society development and community preservation.
- 13) Acting with integrity, credibility and according to the rules of profession.
- 14) Realizing the importance of self and life-long learning and progress.

المقررات التي تحقق المعايير الأكاديمية للبرنامج

Code	Name
763	Genetic of microorganisms
764	Genetic engineering (advanced)
765	Cytogenetics
766	Population genetics (advanced)
767	Physiological genetics
768	Biochemical and radiation Genetics

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 cytogenetic and molecular genetics	Recent theories, principles and knowledge in the field of specialization and related areas
2)	Principles methodologies and ethics of scientific research and its tools in genetic improvement of fertility and production efficiency of animals and poultry	Basics, methodologies and ethics of scientific research and its different tools
3)	Legal and ethical principles in the area of genetics and genetic engineering	Legal and ethical principles of professional practice in the area of specialization
4)	Principles and the basics of quality assurance in animal selection and breeding in the field of veterinary genetics and genetic engineering	Principles and the basics of quality assurance in the area of professional practice in the field of specialization
5)	Awareness with the effect on genetic material on different animal performance, fertility, disease and immunity.	Awareness with the effect of professional practice on genetic material
6)	the effect of professional practice on the environment and methods of environmental development and maintenance	

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)	Analyzing and evaluating information about animals DNA fingerprinting and poultry and the eliciting from them	Analyzing and evaluating information in the field of specialization and the eliciting from them
2)	Solving genetics and genetic engineering problems	Solving professional problems using

		available data
3)	Performing scientific research studies that can give significant impact on the genetic improvement of animal and poultry breeds.	Conducting scientific research studies that add to knowledge
4)	Formulating scientific papers in genetics and genetic engineering.	Formulating scientific papers
5)	Risk-assessment of in genetics and molecular genetics	Risk-assessment in the field of specialization
6)	Planning to enhance the performance in the field of genetics and genetic engineering	Planning to enhance the performance in field of specialization
7)	Making professional decisions for improvement of genetics and genetic engineering under different professional contexts	Making professional decisions under different professional contexts
8)	Creation and innovative in the area of specialization field of genetics and genetic engineering.	Creation and innovative in the area of specialization
9)	Dialogue and discussion based on genetics and production 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 professional skills in the field of genetics and genetic engineering	Mastering basic and modern professional skills in the area of specialization
2)	Writing and evaluating professional genetic reports	Writing and evaluating professional reports
3)	Evaluating and modernizing methods and tools in genetic improvement of fertility and productive efficiency of animal and poultry.	Evaluating and modernizing methods and tools in the area of specialization
4)	Using modern technological means to serve genetic improvement of animal and poultry breeds.	Using modern technological means to serve professional practice
5)	Planning for the maximizing productive and reproductive efficiency of animals and poultry by applying recent techniques in genetics and genetic engineering.	Planning for the improvement of professional practice and developing performance of others

D) General and transferable skill

Adopted ARS	NARS (PhD)
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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 animal and poultry genetics, students and veterinarians.	Effective communication
2)	Utilizing information technology to serve development of genetics and genetic engineering practice	Utilizing information technology to serve development of professional practice
3)	Teaching others and evaluating their performance	Teaching others and evaluating their performance
4)	Self-assessment and continuous learning	Self-assessment and continuous learning
5)	Using different resources to obtain knowledge and information	Using different resources to obtain knowledge and information
6)	Team working and leading a team in familiar professional contexts	Team working and leading a team in familiar professional contexts
7)	Management of scientific meetings with the ability to manage time efficiently	Management of scientific meetings with the ability to manage time efficiently

