National Authority for Quality Assurance and Accreditation Of Education

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National Academic Reference Standards (NARS)

For

Bachelor Degree of Veterinary Medicine

July 2008

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I: INTRODUCTION

Veterinarians are concerned with securing the best output / productivity of livestock, poultry and fish resources via maintaining proper health and production indices. They are also concerning with public health via application of the appropriate measure s for disease control and food hygiene for protection of human against zoonotic diseases transmitted from animals and / or animal byproducts to man. Veterinarians are regarded as guardian of animal and human health, and animal welfare.

As human population is growing rapidly, and more people are moving to urban areas, there is increasing demand for food and animal protein. Since live stock and poultry production are major components of the national agricultural income, this situation provides good prospect for the veterinary profession. The profession is also tacking care of companion animals. It is believed that the standing of the profession will be judged by how it will be able to provide the community with the range and quality of serviceswhich are needed.

The high turn-over rate of development in the domains of veterinary sciences and research all-over the world matched well with the enhancement of the educational standards and quality to face the socio-economic needs and challenges. This in Egypt, initiated and motivated the need for educational reforming and empowerment to ultimately contribute to the sustainable national development and cope with globalization policies is strongly required. Veterinary education has a unique feature as it is a combination of science, art, practical and personal skills, and human-animal interaction.

Hence, the veterinary education in Egypt being facilitated by the NARS and the Veterinary Education Sector of the Supreme of Council of the Egyptian Universities is seeking to ensure and continuously improve the best quality of veterinary education that satisfy community confidence in the graduates caliber which fulfill the best possible professional practice.

Career opportunities:

Veterinary graduates have a wide range of governmental and nongovernmental career opportunities as :

1- General Authority for Veterinary Services performing governmental and nongovernmental services at different disciplines.

2 - Veterinary hospitals, and animal, poultry and fish farms.

3- Animal and poultry abattoirs.

4- Industries for preparing meat and milk byproducts.

5- Pharmaceutical companies for veterinary drug manufacture and their marketing centers.

6- Food hygiene and control in human hospitals, hotels and air port companies.

7- Veterinary Research Institutes and Veterinary Sections in the National Research Center, Desert Research Institute and, and Army.

8- Veterinary diagnostic laboratories.

9- Zoo and laboratory animals facilities.

10- Academic staff members at the veterinary faculties.

11- Advisory services in veterinary medicine.

II: Graduate attributes

The graduates must have the ability to:

1- Demonstrate the proper application of the professional knowledge and skills with positive attitudes and behavior towards better health and productivity of livestock, poultry and fish resources.

2- Commit to continuous enhancement coping with the most effective efficient recent performance standards of the veterinary Profession, soliciting to community confidence.

3- Apply research concept and technologies in different fields of veterinary sciences.

4- Express proper evaluation capacity and uncover curiosity.

5- Consider life-long learning skills.

6- Apply international ethical and legal frame of medical practice-code

7- Show satisfactory interpersonal and communication skills confirming the sensitive role of the veterinarian in society and disseminating the awareness of maintaining animal and human health.

III: National Academic Reference Standards (NARS)

III. A: Knowledge and understanding:

Graduates of Veterinary Medical Program must acquire the following Knowledge and understanding :

1- Basic sciences of biology, chemistry, biophysics, genetics, biostatics, computer science and Veterinary Terminology.

2- Basics of normal behavior, management, breeding, veterinary economics and health maintenance of domestic animals, laboratory animals, poultry, and fish.

3- Normal macro, and microstructure of body tissues, organs and systems of animals, birds and fish.

4- Physiological and biochemical bases of different organs functions, metabolic processes and homeostasis.

5- Principle of welfare, production and health maintenance of food producing and pet animals, sporting animals, wildlife , poultry and fish

6- Basics of nutrition and feeding strategies of healthy and diseased animals.

7- Various causes of animal diseases, their pathogenesis, macro- and microscopic pathological lesions, and laboratory diagnosis.

8- Veterinary medications , uses, marketing, the impact of drug residues on human health and quality control of pharmaceutical practices .

9- General and specific epidemiological pattern of animal population diseases and the most effective immunization protocols.

10- Toxicology and Forensic medicine, Animal medicine, Theriogenology and Veterinary surgery

11- The most appropriate diagnosis and differential diagnosis of animals, poultry and fish diseases.

12- The accurate measurements of veterinary quarantine.

13- Public health including food hygiene of animal origin and zoonotic diseases that are transmitted from animals to human.

14- Basics of laws and ethical codes relevant to animals and food hygiene.

15- Basics of social sciences, communication , human rights.

III. B. Intellectual skills:

Graduates must have the ability to:

1- Foster critical thinking and scientific curiosity.

2- Assess and criticize, at the fundamental level, how data are derived.

3- Inculcate a rigorous approach to problem identification and solving.

4- Proficiently secure diagnostic reasoning , develop problem lists and differential diagnosis in order to reach deductively and critically the most appropriate solution (s) and managed of the addressed clinical problems.

5- Remain committed to life – long learning and updating / upgrading their biochemical sense and clinical skills.

III. C. Practical and professional skills:

Graduates must be attain the capacity to:

1- Employ all the gained knowledge and understanding in clinical practice in a skillful pattern.

2- Safely, correctly and humanely restrain animals for examination.

3- Obtain the history of the case whether it is of an   individual animal or a group of animals.

4- Perform clinical examination of diseased cases and collect relevant samples.

5- Appropriately select and interpret of findings the common clinical and laboratory diagnostic procedures to reach and adopt the most convenient therapeutic and managemental approach.

6- Write a report about hygiene and safety of food of animal origin for human consumption.

7- Assess and advice about animal management, nutrition under conditions of health and disease, and reproductive efficiency.

8- Gain skillfully and appropriately use new information and remain current with the emerging biomedical knowledge and therapeutic options.

9- Conduct evidence-based problems solving of field–presented problems tasks.

10- Provide emergency care to all species of animals.

11- Utilize appropriate safety procedures to protect clients and co-workers.

12- Correctly deal with procedures related to food hygiene, public health issues, notifiable diseases and disposal of animal wastes.

13- Minimize the risk of contamination, cross infection and predisposing factors of diseases.

III. D: General and transferable skills:

Graduates must have the ability to:

Work under pressure and / or contradictory conditions.

2- Function in a multidisciplinary team.

3-Communicate appropriately verbally and non-verbally.

4-Organize and control tasks and resources.

5- Search for new information and technology as well as adopting life–long self learning ethics.

6-Utilize computer and internet skills.

IV: **NARS characterization for veterinary medicine program**

No.	Subject area	Tolerance	Sciences characterization
A	Basic and Basic veterinary sciences	22.00 – 28.00%	Biology, Biophysics, Chemistry, Biostatics, Animal husbandry, Embryology, Histology, Physiology, Anatomy, Biochemistry, Animal welfare and Animal, poultry and fish production.
B	Pre-clinical sciences	17.00 – 23.00%	Genetics, Microbiology, Nutrition, Mycology, Immunology, Virology, Parasitology, Pathology, Clinical pathology, , Pharmacology, and Milk and Meat hygiene.
C	Clinical sciences	40.00 – 44.00%	Epidemiology and pathogenesis, Internal medicine, Infectious diseases, Forensic medicine and toxicology , Poultry and fish diseases, Hygiene, Surgery, Zoonoses , Theriogenology and Clinical investigation, and treatment of animals.
D	Field training	02.00 – 06.00%	Field Trips and clinical investigations.
E	Computing and ICT	1.00 – 3.00%	Computer science , basic IT and application IT.
F	Humanities and Social sciences	2.00 – 4.00%	English, economics, human rights and social studies
G	Discretionary subjects	4.00 – 8.00%	Allowed to each faculty to used based on its mission.
	Total	100%	

Content of Different Subject Areas

Basic Sciences and Basic Veterinary Sciences:

Include: Biology, Biophysics, Chemistry , Biostatics , Animal husbandry (Animal behavior and management) , Embryology , Histology , Physiology , Anatomy , Breeding , Biochemistry , , Animal welfare and Animal, poultry and fish production .

Pre-Clinical Sciences :

Include: Genetic, Nutrition, , Microbiology, Mycology, Immunology, Virology, Parasitology, Pathology, Clinical pathology, Pharmacology and Milk and Meat hygiene.

Clinical Sciences:

Include: Epidemiology and pathogenesis , Internal medicine , Infectious diseases , Forensic medicine and toxicology , Poultry diseases , Fish diseases , Meat hygiene , Surgery , Hygiene , Zoonoses , Theriogenology (gynecology , obstetrics , andrology and artificial insemination) and Clinical investigation , laboratory diagnosis and treatment of animals.

Computing and ICT:

Include: Computer sciences , Basic IT and Application IT.

Humanities and social sciences

Includes: English, Economics, human rights and social studies

Pre-requisites to student admission

At the entry, the learner is assumed to be proficient in:-

- Bio-Sciences
- English Language

Glossary

The National Academic Standards (NARS)

NARS serve as an external reference for designing and upgrading the undergraduate educational program for the faculties of veterinary medicine, and represent the general expectation about the standards for the awards of Bachelor degree in the veterinary medicine sciences. The standards are not considered a curriculum or a syllabus and represent the minimum academic quality requirements.

References

Academic reference standards and regulations in the following Faculties of Veterinary Medicine in different Universities:-

1- Washington State Univ. , College of Vet. Medicine

http://www.vetmed.wsu.edu/

2- University of California- Davis , College of Vet. Medicine

http://www.vetmed.ucdavis.edu/

3- University of Florida , College of Vet. Medicine

http://www.vetmed.ufl.edu/

4- Texas A & M, College of Vet. Medicine

http://www.cvm.tamu.edu/

5- Virginia-Maryland Regional, College of Vet. Medicine

http://www.vetmed.vt.edu/

6-University of Wisconsin , School of Vet. Medicine

http://www.vetmed.wisc.edu/home

7-University of London , Royal Veterinary College

http://www.rvc.ac.uk/

8- Free Univ. Berlin , , Fac. Vet. Med.

http://www.vetmed.fu-berlin.de/

9- Leipzig Univ. , Fac. Vet. Med.

http://www.uni-leipzig.de/fak/vet.htm

10- Cornell Univ., College of Vet. Med.

11-, Georgia University , Faculty of Veterinary Medicine, USA.

12-Western University, College of Veterinary Medicine, USA.

13-Ross University, School of Veterinary Medicine, USA.

14-Western Canada, College of Veterinary Medicine, Canada.

15- University of Veterinary Medicine, Vienna Austria.

16-Dublin University, College of Veterinary Medicine, Ireland.

17-Faculty of Veterinary Medicine, Hanover, Germany.

18-London University, Royal Veterinary College, UK.

19-Queensland University, Faculty of Veterinary Science, Australia

Websites

http://niah.naro.affrc.go.jp/link/collection/veterinary/USA.html
http://www.gradschools.com/programs/veterinary_medicine.html
http://www.gradschools.com/programs/veterinary_medicine.html
http://netvet.wustl.edu/vschool.htm

http://www.vetmed.wsu.edu/prospectivestudents/academicStandards.aspx