FACULTY OF VETERINARY MEDICINE –BENHA UNIVERSITY

Program specification

Bachelor in veterinary medicine

Credit hours bylaw 2022

2025/2026

Program Specification

(2025)

1. Basic Information

ProgramTitle (according to what is stated in the bylaw):	Bachelor in veterinary **medicine**
Total number of credit hours/points of the program:	192 credit hour
Number of academic years/levels (expected program duration):	5 academic years plus a mandatory internship year
Department (s) Participating (if any) in teaching the program:	21 department
Faculty/Institute:	Faculty of veterinary Medicine
University/Academy:	Benha university
Program majors/divisions/tracks/specialties in the final year (if any):	**-**
Partnerships with other parties and the nature of each (if any):	**-**
Name of the program coordinator (attach the assignment decision):	Prof. Dr. Mahmoud A. AbuElroos **(Faculty council No. 490, date: 19-2-2025)**
Program Specification Approval Date:	**8/27/2025**
Council responsible for Program Specification Approval (Attach the Decision / Minutes):	Faculty Council No. 496, date: 27-8-2025

2. Program Aims (Brief description of the overall purpose the program)

The primary aim of a veterinary medicine program is to produce graduates equipped with the knowledge, skills, and practical experience to diagnose, treat, and prevent diseases and disorders in animals. This program also aims to equip students with the knowledge and skills to promote animal welfare, public health, and food safety. Furthermore, veterinary programs often foster critical thinking, research, and lifelong learning in the field of veterinary medicine. More ever, the veterinary program apply international ethical and legal frame of medical practice-code, 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

Intended Learning Outcomes of the Program (ILOs)[NARS outcomes]

2. Knowledge and Understanding

Graduates of Veterinary Medical Program must acquire the following knowledge and understanding

2.1. Basic sciences of biology, chemistry, biophysics, genetics, biostatics, computer science and veterinary terminology.
2.2. Basics of normal behavior, management, breeding, veterinary economics and health maintenance of domestic animals, laboratory animals, poultry, and fish.
2.3. Normal macro, and micro-structure of body tissues, organs and systems of animals, birds and fish
2.4. Physiological and biochemical bases of different organ functions, metabolic processes and homeostasis.
2.5. Principle of welfare, production and health maintenance of food producing and pet animals, sporting animals, wildlife , poultry and fish
2.6. Basics of nutrition and feeding practices of healthy and diseased animals.
2.7. Various causes of animal diseases, their pathogenesis, macro- and micro-scopic pathological lesions, and laboratory diagnosis.
2.8. Veterinary medications, uses, marketing, the impact of drug residues on human health and quality control of pharmaceutical practices
2.9. General and specific epidemiological pattern of animal population diseases and the most effective immunization protocols.
2.10. Toxicology and forensic medicine, animal medicine, theriogenology and veterinary surgery.
2.11. The most appropriate diagnosis and differential diagnosis of animals, poultry and fish diseases
2.12. The accurate measurements of veterinary quarantine.
2.13. Public health, including food hygiene of animal origin and zoonotic diseases that are transmitted from animals to humans.
2.14. Basics of law and ethical codes relevant to animals and food hygiene.
2.15. Basics of social sciences, communication, and human rights.

3. Practical and professional skills

Graduates must attain the capacity to:

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

3.2. Safely, correctly and humanely restrain animals for examination

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

3.4. Perform clinical examination of diseased cases and collect relevant samples.

3.5. Appropriately select and interpret findings of the common clinical and laboratory diagnostic procedures to reach and adopt the most convenient therapeutic and manage mental approach.

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

3.7. Assess and advise about animal management, nutrition under conditions of health and disease, and reproductive efficiency.

3.8. Skillfully and appropriately gain and use new information remain current with the emerging biomedical knowledge and therapeutic options.

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

3.10. Provide emergency care to all species of animals.

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

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

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

4. Intellectual skills

Graduates must have the ability to:

4.1. Foster critical thinking and scientific curiosity.

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

4.3. Inculcate a rigorous approach to problem identification and solving.

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

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

5. General and Transferable Skills

Graduates must have the ability to:

5.1. Work under pressure and / or contradictory conditions.

5.2. Function in a multidisciplinary team

5.3. Communicate appropriately verbally and non-verbally.

5.4. Organize and control tasks and resources

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

5.6. Utilize computer and internet skills

3. Program Structure (Curriculum)

- **Program Components**

Requirement Category/Type		Number of Courses	Number of Credit Hours/Points	Percentage from the total number of hours/points
University Requirements		**4**	**4hr**	**2.08%**
Faculty/College Requirements (if applicable)		**73**	**182hr**	**94.79%**
Program Requirements		**80**	**192hr**	**100**
Requirements of the majors/ divisions/ tracks/ specializations in the final year (if any)		**----------**	**----------**	**----------**
Other requirements	**Field Training**		**----------**	**----------**
	Graduation Project		**----------**	**----------**
	Mandatory training year		**One academic year [** 8hr per day, five days per week**]**	
	Other (to be mentioned)		**----------**	**----------**
Total Compulsory Courses		**77**	**186hr**	**96.87%**
Elective Courses		**3**	**6hr**	**3.13%**
Total		**80**	**192hr**	**100%**

- **Curriculum structure based on NARS**

Subject area	Science characterization	Credit hours	Percentage in program	Tolerance (NARS)
Basic sciences courses	Biology Chemistry Anatomy Histology Biochemistry Physiology Biophysics Biostatistics Behavior of Animal, poultry	52hr	27.08%	22– 28%

	and fish Animal and poultry breeding			
Pre-clinical sciences courses	Genetics Genetic Engineering pharmacology Virology pathology General bacteriology, immunology & mycology Parasitology Animal, poultry and fish nutrition and malnutrition diseases Milk control, Hygiene, Safety and Technology	44 hr	22.92%	17 – 23%
Clinical sciences courses	Medicine Forensic medicine and Toxicology Veterinary Epidemiology Pathogenesis (pathology C&D) Clinical pathology Animal , poultry, fish Hygiene and environment Surgery and Anesthesiology and diagnostic imaging theriogenology Zoonoses Infectious Diseases Poultry and Rabbit diseases Aquatic animals medicine Meat control, Hygiene, Safety and Technology Clinical Diagnosis & Therapeutics	82 hr	42.71%	40 – 44%
Humanities courses	Professional ethics English courses, economic social issues	7 hr	3.65%	2– 4%

Computing and ICT	Information technology and communication, programming	2 hr	1.04%	1-3%
Discretionary courses	General University compulsory courses, Electives courses	8 hr	4.16%	4–8%
Training	Field training, Clinical elective courses and Clinical Diagnosis & Therapeutics	10 hr	5.21%	**2 –6%**
	In addition to One academic year mandatory internship training [8hr per day, five days per week]			

- **Program courses according to the expected study plan**

Academic Level	Semester	Course Code	Course Title	Course Type (Compulsory / Elective)	Requirement Category/ Type	Number of Credit Hours/ Points	Number of Weekly Hours		
							Theoretical teaching	Practical training	Other
First level	Fall	ELT.111	English language & veterinary medical terminology	compulsory	Faculty	1	1	0	
		BIZ.112	Biology (zoology)	compulsory	Faculty	2	1	1[2]	
		CHE.113	Chemistry	compulsory	Faculty	2	1	1[2]	
		ANE.114	Anatomy (A)	compulsory	Faculty	2	1	1[2]	
		HIS.115	Histology (A)	compulsory	Faculty	2	1	1[2]	
		BMB.116	Biochemistry and molecular biology (A)	compulsory	Faculty	2	1	1[2]	
		PHY.117	Physiology (A)	compulsory	Faculty	2	1	1[2]	
		GCC.001	English language	compulsory	**university**	1	1	0	
	Spring	BIP.121	Biophysics	compulsory	Faculty	2	1	1[2]	
		AWD122	Biostatistics	compulsory	Faculty	2	1	1[2]	
		ANE.123	Anatomy (B)	compulsory	Faculty	2	1	1[2]	
		HIS.124	Histology (B)	compulsory	Faculty	2	1	1[2]	
		PHY.125	Physiology (B)	compulsory	Faculty	2	1	1[2]	
		BMB.126	Biochemistry (B)	compulsory	Faculty	2	1	1[2]	
Second level	Fall	AWD.211	Genetics	compulsory	Faculty	2	1	1[2]	
		PHY.212	Physiology (C)	compulsory	Faculty	2	1	1[2]	
		ANE.213	Anatomy (C)	compulsory	Faculty	3	2	1[2]	
		HVC.214	Behavior of Animal, poultry and fish(A)	compulsory	Faculty	3	2	1[2]	

		AWD.215	Animal and poultry production (A)	compulsory	Faculty	2	1	1[2]	
		HIS 216	Histology)C)	compulsory	Faculty	2	1	1[2]	
		BMB.217	Biochemistry (C)	compulsory	Faculty	3	2	1[2]	
		GCC.002	Social issues	compulsory	**university**	1	1	0	
	Spring	PHY.221	Physiology)D)	compulsory	Faculty	2	1	1[2]	
		AWD222	Genetic Engineering	compulsory	Faculty	2	1	1[2]	
		AWD.223	Veterinary Economics	compulsory	Faculty	3	2	1[2]	
		HVC.224	Managment of Animal, poultry and fish (A)	compulsory	Faculty	3	2	1[2]	
		AWD.225	Animal and poultry breeding (B)	compulsory	Faculty	2	1	1[2]	
		BMB.226	Biochemistry D)	compulsory	Faculty	2	1	1[2]	
		HIS.227	Histology of poultry and Fish)D)	compulsory	Faculty	2	1	1[2]	
		ANE.228	Anatomy (D)	compulsory	Faculty	2	1	1[2]	

Academic Level	**Semester**	**Course Code**	**Course Title**	**Course Type (Compulsory / Elective)**	**Requirement Category/ Type**	**Number of Credit Hours/ Points**	**Number of Weekly Hours**		
							Theoretical teaching	**Practical training**	**Other**
Third level	Fall	PHA.311	General & systemic pharmacology	compulsory	Faculty	3	2	0	
		VIR.312	Virology (A)	compulsory	Faculty	3	2	1[2]	
		PAT.313	General pathology	compulsory	Faculty	2	1	1[2]	
		BIM.314	General bacteriology, immunology & mycology	compulsory	Faculty	3	2	1[2]	
		PAR.315	Parasitology (A)	compulsory	Faculty	3	2	1[2]	
		NCN.316	Animal, poultry and fish nutrition and malnutrition diseases (A)	compulsory	Faculty	3	2	1[2]	
		FHC.317	Milk control, Hygiene, Safety and Technology (A)	compulsory	Faculty	3	2	1[2]	
		GCC.003	Information technology and communication	compulsory	**university**	1	1	0	
	Spring	PHA.321	Special pharmacology	compulsory	Faculty	3	2	1[2]	
		VIR.322	Virology (B)	compulsory	Faculty	3	2	1[2]	
		PAT.323	Pathology (B)	compulsory	Faculty	2	1	1[2]	
		BIM.324	Special Bacteriology	compulsory	Faculty	3	2	1[2]	
		PAR.325	Parasitology (B)	compulsory	Faculty	3	2	1[2]	
		NCN.326	Animal, poultry and fish nutrition and malnutrition	compulsory	Faculty	3	2	1[2]	

			diseases (B)						
		FHC.327	Milk control, Hygiene, Safety and Technology (B)	compulsory	Faculty	3	2	1[2]	
Fourth level	Fall	MID.411	General Medicine) A)	compulsory	Faculty	2	1	1[3]	
		FMT 412	Forensic medicine & veterinary regulations	compulsory	Faculty	3	2	1[2]	
		HVC.413	Veterinary Epidemiology	compulsory	Faculty	1	1		
		CPA.414	Clinical pathology (A)	compulsory	Faculty	3	2	1[2]	
		HVC.415	Animal , poultry, fish Hygiene and Environment (A)	compulsory	Faculty	2	1	1[2]	
		PAT.416	Pathology (C)	compulsory	Faculty	2	1	1[2]	
		SUR.417	General surgery	compulsory	Faculty	2	1	1[3]	
		TGA.418	Gynecology	compulsory	Faculty	2	1	1[3]	
		GCC.004	Professional ethics	compulsory	**university**	1	1	0	
	Spring	MID.421	Special Medicine (B)	compulsory	Faculty	2	1	1[3]	
		FMT.422	Toxicology	compulsory	Faculty	3	2	1[2]	
		CPA.423	Clinical pathology (B)	compulsory	Faculty	3	2	1[2]	
		TGA.424	Andrology	compulsory	Faculty	2	1	1[3]	
		HVC.425	Animal, poultry, fish Hygiene and Environment (B)	compulsory	Faculty	3	2	1[2]	
		PAT.426	Pathology(D)	compulsory	Faculty	2	1	1[2]	
		SUR.427	Anesthesiology and diagnostic imaging	compulsory	Faculty	2	1	1[2]	
Fifth level	Fall	MID.511	Special medicine (C)	compulsory	Faculty	3	2	1[3]	
		ZON.512	Zoonoses (A)	compulsory	Faculty	3	2	1[3]	
		MID.513	Infectious Diseases (A)	compulsory	Faculty	3	2	1[3]	
		SUR.514	Special surgery	compulsory	Faculty	3	2	1[3]	
		TGA.515	Obstetric	compulsory	Faculty	3	2	1[3]	
		PRD.516	Poultry and Rabbit diseases(A)	compulsory	Faculty	3	2	1[3]	
		AQM.517	Aquatic animals medicine (Management and aquaculture) (A)	compulsory	Faculty	3	2	1[2]	
		FHC.518	Meat control, Hygiene, Safety and Technology (A)	compulsory	Faculty	3	2	1[2]	
	Spring	ZON.521	Zoonoses (B)	compulsory	Faculty	3	2	1[3]	
		MID.522	Infectious Diseases (B)	compulsory	Faculty	3	2	1[3]	
		SUR.523	Lameness	compulsory	Faculty	3	2	1[3]	
		TGA.524	Artificial insemination and	compulsory	Faculty	3	2	1[3]	

			embryo transfer						
		PRD525	poultry and Rabbit diseases (B)	compulsory	Faculty	3	2	1[3]	
		AQM.526	Aquatic animals medicine (Diseases) (B)	compulsory	Faculty	3	2	1[3]	
		FHC.527	Meat Control, Hygiene, Safety and Technology (B)	compulsory	Faculty	3	2	1[3]	
		MID.528	Clinical Diagnosis & Therapeutics "advanced approaches" (medicine and infectious diseases)	compulsory	Faculty	3	2	1[3]	

Schedule of elective courses

a) General elective courses (university requirement)

Academic Level	Semester	Course Code	Course Title	Course Type (Compulsory / Elective)	Requirement Category/ Type	Number of Credit Hours/ Points	Number of Weekly Hours		
							Theoretical teaching	Practical training	Other
First level	Spring	GEC.001	Programing	elective	university	1	1	0	
		GEC.002	Intellectual property rights	elective	university	1	1	0	
		GEC.003	Marketing and entrepreneurship	elective	university	1	1	0	
		GEC.004	Academic study skills	elective	university	1	1	0	
Second level	Spring	GEC.005	Egyptian identity and personality	elective	university	1	1	0	
		GEC.006	Quality management systems	elective	university	1	1	0	
		GEC.007	Human Recourses	elective	university	1	1	0	
		GEC.008	Business commination	elective	university	1	1	0	
Third level	Spring	GEC.009	Business administration	elective	university	1	1	0	
		GEC.010	Leadership skills	elective	university	1	1	0	
		GEC.011	First aid skills	elective	university	1	1	0	
		GEC.012	communication skills	elective	university	1	1	0	

b) Clinical elective courses (program requirement)

Academic Level	Semester	Course Code	Course Title	Course Type (Compulsory / Elective)	Requirement Category/ Type	Number of Credit Hours/ Points	Number of Weekly Hours		
							Theoretical teaching	Practical training	Other
Fourth level	Spring	CEC.001	Veterinary Medical sports	elective	Faculty	2	1	1[2]	
		CEC.002	Clinical and laboratory diagnosis in case of toxicity in animals of poultry	elective	Faculty	2	1	1[2]	
		CEC.003	Equine diagnostic Imaging	elective	Faculty	2	1	1[2]	
		CEC.004	Ultrasonography (Reproductive)	elective	Faculty	2	1	1[2]	

Fifth level	Fall	CEC.005	Veterinary physiotherapy	elective	Faculty	2	1	1[2]	
		CEC.006	Equine Orthopedic Surgery	elective	Faculty	2	1	1[2]	
		CEC.007	Vaccination program in ruminant	elective	Faculty	2	1	1[2]	
		CEC.008	Clinical and laboratory diagnosis in reproductive diseases	elective	Faculty	2	1	1[2]	
Fifth level	Spring	CEC.009	Ophthalmology	elective	Faculty	2	1	1[2]	
		CEC.010	Clinical and laboratory diagnosis in poultry and rabbit diseases	elective	Faculty	2	1	1[2]	
		CEC.011	Vaccination programs in pets and equine	elective	Faculty	2	1	1[2]	
		CEC.012	Clinical and laboratory diagnosis of Aquatic animal diseases and basics of biosecurity in fish farms	elective	Faculty	2	1	1[2]	

- **Courses content written in the program bylaw**

أ. المقررات الاساسية الاجبارية

١. المستوي الاول

Course Name: English language, veterinary medical Terminology	Credit hours	
Code number: ELT.111	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: Reading skills; reviewing, recognizing, perception, analysis, evaluation & comprehending. Writing skills/ thinking & itemizing points, choosing effective phrases, planning, preparing good sentences & better ones, comprehension and revising. Basic principles of veterinary medical terminology.		

Course Name: Biology (Zoology)	Credit hours	
Code number: BIZ.112	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Classification Of The Animal Kingdom; General Characteristics Of Each Class.		

Course Name: Chemistry	Credit hours	
Code number: CHE.113	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Physical chemistry (states of matter, solutions, chemical equilibrium and kinetics. Thermochemistry, electrolytic conduction, application of ionic theory). Organic chemistry (General principles of alkanes, alkenes, alkynes, alcohols, ethers aldehydes and ketones); saturated monocarboxylic acids; monocarboxylic, acid derivatives; amines; mono substituted monocarboxylic acids; carbohydrates; isomerism, aromatic compounds.		

Course Name: Anatomy and Embryology (A)	Credit hours	
Code number: ANE.114	Lectures	Practical
Prerequisite courses:-	1	1(2)

Course contents: Introduction of general anatomy, topographic anatomy in animals..

Course Name: Histology (A)	Credit hours	
Code number: HIS.115	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Cytology: Cytology, cell biology, histochemistry, immunohistochemistry and cytogenetics, histological techniques; microscopy & E.M; immunoflurcence Microscopy		

Course Name: Biochemistry and molecular biology (A)	Credit hours	
Code number: BMB.116	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Molecular structure and chemistry of carbohydrates; lipids and proteins		

Course Name: Physiology (A)	Credit hours	
Code number: PHY.117	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Cell physiology, physiology of blood and body fluids and physiology of respiratory system.		

Course Name: Biophysics	Credit hours	
Code number: BIP.121	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Body electricity and tissue /organ electric conductivity, Biophysical basics of diagnostic X- ray; natural and artificial nuclear activity; control of ionized radiation and personal preventive means; cooling and heating measures in medical and surgical treatment.		

Course Name: Biostatistics	Credit hours	
Code number: AWD.122	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Introduction; Description of the data; Measures of central tendency; measures of dispersion; probability laws; binomial distribution; normal distribution, testing hypothesis (independent T-test and paired T-test): (Latinsquare) and Nested design simple correlation and simple regression.		

Course Name: Anatomy and Embryology (B)	Credit hours	
Code number: ANE.123	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: . Male gentile system, female gentile system, general embryology, bones of the pelvic limb, dissection of the pelvic limb of horse, special arthrology of pelvic limb of horse and hoof anatomy.		

Course Name: Histology (B)	Credit hours	
Code number: HIS.124	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: General histology, tissues, epithelium, muscular system, connective tissues, blood and cardiovascular system. Nervous tissues and system		

Course Name: Physiology (B)	Credit hours	
Code number: PHY.125	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Muscles and nerves physiology, physiology of urinary system and physiology of energy metabolism		

Course Name: Biochemistry (B)	Credit hours	
Code number: BMB.126	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Chemistry of enzymes, vitamins and minerals		

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Course Name: Genetic	Credit hours	
Code number: AWD.211	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Molecular genetics and Biotechnology: The genetic materials; DNA replication; Genetic expression; Gene regulation and protein synthesis; mutations and mutagens;		

Course Name: Physiology (C)	Credit hours	
Code number: PHY.212	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Physiology of cardiovascular system, physiology of endocrine system and physiology of CNS.		

Course Name: Anatomy and Embryology (c)	Credit hours	
Code number: ANE.213	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Digestive system, lymphatic system, vertebral column, anatomy of ribs and sternum and dissection of the abdomen and thorax		

Course Name: Behavior Of Animal, Poultry and fish (A)	Credit hours	
Code number: HVC.214	Lectures	Practical
Prerequisite courses:- -	2	1(2)

Course contents: Animal & poultry behavior: introduction, Behavior of equines, cattle and buffaloes, sheep and goats, pet animals, camel, laboratory animals, poultry, rabbits and fish.

Course Name: Animal and poultry Production	Credit hours	
Code number: AWD.215	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Animal & poultry and Fish production: Dairy industry; Essentials for profitable dairy farm; reproductive performance; lactation ; rearing calves & heifers; herd replacement and culling; herd health program; the commercial cow-calf producer; growth and development in beef cattle, carcass characteristics and factors affecting meat quality, beef production system; establishing the flock of sheep & Goats; wool and mohair production system of sheep and goat production; Management of commercial poultry breeders; light regime for open and closed poultry house system; principles of quail & ostrich production; Duck, Gees and Turkey production; Rabbit production; fish production.		

Course Name: Histology (C)	Credit hours	
Code number: HIS.216	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Special histology of system, respiratory, skin, endocrine, urogenital system, sense organs		

Course Name: Biochemistry (C)	Credit hours	
Code number: BMB.217	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Biological oxidation. Carbohydrate and lipid metabolism		

Course Name: Physiology (D)	Credit hours	
Code number: PHY.221	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: physiology of reproduction, digestive system and comparative physiology		

Course Name: Genetic Engineering	Credit hours	
Code number: AWD.222	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Ggenetic engineering; Gene transfer; DNA fingerprint; methods of studying the genome and farm animal improvement; Genetic and cancer, Genetic and animal disease; immunogenetics, Genetic and behavior.		

Course Name: Veterinary Economics	Credit hours	
Code number: AWD.223	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents:		

.introduction about economic; Economic problem: Economic factors; Demand; Supply Elasticity and their types; consumer behavior theory; production function theory; costs and their types; Economic and productive efficiency; Feasibility studies; Economic effect of disease on animal productivity; Budgeting; Farm records, linear programming; Measures of performance; interest rate; position of animals farms and relationship between them; Marketing (Types, agencies, channels, enterprises); planning marketing operation, problems of marketing animal production.

Course Name: Management of animal, poultry and fish (B).	Credit hours	
Code number: HVC.224	Lectures	Practical
Prerequisite courses:- -	2	1(2)
Course contents: Animal & poultry management: introduction, management of equines, cattle and buffaloes, camel, sheep and goats, pet animal laboratory animals, fowl, water fowl and Turkey.		

Course Name: Animal and poultry breeding	Credit hours	
Code number: AWD.225	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Management of commercial poultry breeders; light regime for open and closed poultry house system; principles of quail & ostrich production; Duck, Gees and Turkey production; Rabbit production; fish production.		

Course Name: Biochemistry (D)	Credit hours	
Code number: BMB.226	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Molecular biology and protein metabolism.		

Course Name: Histology of poultry and fish (D)	Credit hours	
Code number: HIS.227	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Comparative histology of different system in poultry and fish		

Course Name: Anatomy (D)	Credit hours	
Code number: ANE.228	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Respiratory system, nervous system, special Embryology, skull anatomy and dissection of head and neck		

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Course Name: General and systemic pharmacology	Credit hours	
Code number: PHM.311	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: General pharmacology; Autonomic nervous system; central nervous system, Autocoids; Growth promoters; Metabolism.		

Course Name: Virology (A)	Credit hours	
Code number: VIR.312	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Nature, structure, biology morphology and ecology of viruses; physical and chemical properties of viruses; classification of viruses affecting animal and human ; molecular study of viral host cell interaction; Tropism; pathogenesis and mechanisms of viral replication; specific and non-specific immune defense host mechanisms (humeral and /or cellular) to the virus; the role of IFN; Viral immune pathogenesis; Defense to viral infection; viral Vaccinology.		

Course Name: General pathology	Credit hours	
Code number: PAT.313	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Definitions and historical aspects of pathology. Cellular base for disease. Etiology of diseases. Circulatory disturbances and degenerations. Disturbances of development and growth of cells. Inflammation, immunological disorders, regeneration and repair. Neoplasia.		

Course Name: General bacteriology, immunology and mycology	Credit hours	
Code number: BIM.314	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Bacterial morphology and bacterial growth ; Bacterial physiology bacterial mutation and metabolic products; pathogenicity and virulence infection and anti chemotherapeutics. Fungi classification; nutrition and reproduction of fungi; Fungi diagnosis ; antifungal drugs; mycotoxins. Yeasts (classififcation and identification). Molds (dermatophytes, aspergillus, zygomycetes); Dimorphich fungi. Immunology: Definitions and terminology; innate immunity antigen; acquired and humoral immunicty; complement system antigen and antibody. Reaction; Hypersensitivity; immunology of tumors and their markers; immunology of transplantation and histocompatibility ; immune- prophylaxis.		

Course Name: parasitology (A)	Credit hours	
Code number: PAR.315	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Introductions; Helminthology (trematodes, custodies and nematodes); general character, morphological character, life cycle, pathogenesis of the parasites; general study of mollusks and their role in the transmission of parasitic disease. Control of mollusks. Fish parasites (protozoa,		

cestodes, nematodes & trematodes), morphological characters, life cycle,public health importance and methods of control.

Course Name: Animal, poultry and fish nutrition and malnutrition diseases(A)	Credit hours	
Code number: NCN.316	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Principles of nutrition and vet. Dietetics; chemical composition and evaluation of feed stuffs; assimilation and utilization of nutrients. Nutrient's inadequacy; feeding standards and nutrients requirements. Applied nutrition for maintenance. Poultry, rabbits, fish and other aquatic animals. Classification of feedstuffs; feed supplements & additives. Feed processing. Commercial feeds and feed laws.		

Course Name: Milk and Milk products control, Hygiene, safety and Technology (A)	Credit hours	
Code number: FHC.317	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Physical properties of milk; chemical composition; chemical examination; adulteration of milk sanitary and bacteriological examination of mik; milk enzymes; Microorganisms associated with mik, sources of contamination normal fermentation, taints and abnormal condition of milk; milk residues; milk borne diseases, clean milk production; changes in milk due to mastitis; Heat treatment of milk; sanitizinig milk utensils and dairy equipment.		

Course Name: Special pharmacology	Credit hours	
Code number: PHM.321	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Cardiovascular system; respiratory system; Digestive system; Reproductive system, Drugs acting on skin and eye; chemotherapy (Sulphonamides, antiviral, anthelminitics, antiseptics and disinfectants, antiprotozoal drugs); clinical pharmacology; insecticides.		

Course Name: Virology (B)	Credit hours	
Code number: VIR.322	Lectures	Practical
Prerequisite courses	2	1(2)
Course contents: Viral groups including the families and the selected viruses of significant importance to animals (cattle, buffalo, sheep, goats, equines, poultry, rabbits, fish, pet and wild animals) and their public health significance among human population covering taxonomy, antigenicity, epidemiology, diagnosis and control.		

Course Name: pathology (B)	Credit hours	
Code number: PAT.323	Lectures	Practical
Prerequisite courses:- PAT.223	1	1(2)
Course contents: Pathology of disease affecting skin and its appendages ; the musculoskeletal system; the		

respiratory system; the cardio-vascular system; the hemic and lymphatic system; the digestive system/ The urinary system; the genital system; the nervous system and organs of special sense; pathology of important infectious and non- infectious disease of domestic animals.

Course Name: Special Bacteriology	Credit hours	
Code number: BIM.324	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Gram positive cocci; Gram positive bacilli ; Gram positive coccobacilli Gram negative occobacilli; gram negative cocci gram negative bacilli special bacteria.		

Course Name: Parasitology (B)	Credit hours	
Code number: PAR.325	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Protozoology (structure, function and classification of protozoa; morpho biological characters and diagnosis). Entomology (Anatomy and function of arthropods of medical and veterinary importance, classification, transmission of diseases, life cycle, their role in transmitting disease to animals and man); Control of arthropods.		

Course Name: Animal, poultry and fish nutrition and malnutrition diseases(B)	Credit hours	
Code number: NCN.326	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Nutrient's requirements and applied nutrition for pre-ruminants; beef and dairy animlas; sheep & Goats; camels equines pet and lab. Animals. Nutrition as related to metabolic disorders & reproduction. Mal-nutritional and food –borne illnesses. Nutrition- infectious diseases inter-relationships. Therapeutic nutrition.		

Course Name: Milk and Milk products control, Hygiene, safety and Technology (B)	Credit hours	
Code number: FHS.327	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Properties of fats & oils; Sampling , physical constants; chemical constants; specific test for fats and oils; adulteration of butter with fats & oils, margarine & concentrated margarine, Eggs; formation & structure of egg, chemical composition, nutritive value, egg faults, preservation of eggs, diseases transmitted through eggs, microbiological examination of eggs, antimicrobial defense mechanisms in eggs. Dairy technology & preservation of cream, butter & ghee, cheese, fermented milk, concentrated milk, powder, infant's food and ice0 cream.		

٤-المستوي الرابع

Course Name: General Medicine (A)	Credit hours	
Code number: MID.411	Lectures	Practical
Prerequisite courses:-	1	1(3)
Course contents: Clinical examination for reaching diagnosis general systemic states, principles of therapeutics/ clinical practice Field diagnostic tests, interpretation of the different tests in connection with clinical finding and treatment in diseased animals.		

Course Name: Forensic medicine and Veterinary Regulations	Credit hours	
Code number: FMT.412	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Identification; Death ; wounds asphyxia; thermal injuries; forensic toxicology medico legal law and medical ethics and veterinary regulations.		

Course Name: Veterinary Epidemiology	Credit hours	
Code number: HVC.413	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: Definitions; uses; types components; patterns; disease determinats; transmission and maintenance of disease; sources and reservoir infection; source of data; data storage and retrieval; measures of disease occurrence; general principles for the control of infectious diseases.		

Course Name: Clinical pathology (A)	Credit hours	
Code number: CPA.414	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Clinical hematology; abnormalities in blood hemostasis; case studies. Abnormalities of inorganic and organic constituents of blood & acid base balance clinical urology; clinical enterology case studies.		

Course Name:Animal, poultry, fish Hygiene and Environmental (A)	Credit hours	
Code number: HVC.415	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Water (resources, pollution, improvement, treatment, hygienic reqirement, water quality standard); Air (Requirements, pollution, macro and microclimate, air born infection, ventilation) ; soil (typs, pollution and prevention, soil born infection); Animal and poultry housing.		

Course Name: Special pathology (C)	Credit hours	
Code number: PAT.416	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Pathology of disease affecting different body system in case of different microbial , viral , mycotic and parasitic diseases		

Course Name: General Surgery (A)	Credit hours	
Code number: SUR.417	Lectures	Practical
Prerequisite courses	1	1(3)
Course contents: Asepsis and antisepsis; suturing injections; inflammation abscess; sinus and Fistula; necrosis and Gangrene; Ulcers; burns phlegmon, bones; joints, muscles; tendonsy bursae; nerves vessels; tumors and cysts wounds; Hemorrhage.		

Course Name: Gynecology (A)	Credit hours	
Code number: 418	Lectures	Practical
Prerequisite courses:-	1	1(3)
Course contents: Reproductive Pattern & fertility: Control of reproduction: Infertility in Farm animals. Reproductive management		

Course Name: Special Medicine (B)	Credit hours	
Code number:	Lectures	Practical
Prerequisite courses:-	1	1(3)
Course contents: Disease of musculo –skeletal system; digestive, respiratory and cardiovascular systems; the blood and blood forming elements diseases, the nervous, urinary and dermal systems diseases; clinical signs, treatment and control in different farm animals. Diseases caused by physical agents. Metabolic disorders and deficiency disease.		

Course Name: Toxicology	Credit hours	
Code number:	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: General toxicology; toxic kinetic and toxic dynamics; clinical toxicology; antidotes, analytical toxicology; toxicity of pesticides; toxicity of heavy metals; mycotoxins; animal poisons; poisonous plants; radiation toxicity; environmental toxicology; toxic gases Role of nano-particles in toxicology field.		

Course Name: Clinical pathology (B)	Credit hours	
Code number: CPA.423	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Clinical hematology; abnormalities in blood hemostasis; case studies. Abnormalities of inorganic and organic constituents of blood & acid base balance clinical urology; clinical enterology case studies.		

Course Name: Andrology	Credit hours	
Code number: TGA.424	Lectures	Practical
Prerequisite courses:-	2	1(3)
Course contents: Reproductive physiology, male sexual behavior. Semen biology, male infertility and sire selection. Diseases causing abortion		

Course Name: Animals, poultry , Fish Hygiene and Environment (B)	Credit hours	
Code number: HVC.425	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Control of contagious diseases; Eradiciation of external parasites; transportation of animals; Disposal and utilization of animal & poultry wastes; biosecurity ; stress and animal health; fish farming and aquanculture hygiene.		

Course Name: Pathology (D)	Credit hours	
Code number: 426	Lectures	Practical
Prerequisite courses:-	1	1(2)
Course contents: Pathology of viral diseases of farm animals, equines, poultry, pets and fish , pathology of mycotic diseases of farm animals, equines, poultry, pets and fish.		

Course Name: Anesthesiology and diagnostic imaging	Credit hours	
Code number: 427	Lectures	Practical
Prerequisite courses:-	1	1(3)
Course contents: Preanesthetic; local regional and general anesthetics; diagnostic imaging; radiography , sonography and oilier techniques and Endoscopy.		

٥-المستوي الخامس

Course Name: Special Medicine (c)	Credit hours	
Code number: MID.511	Lectures	Practical
Prerequisite courses:-	2	1(3)
Course contents: Diseases of Musculo- skeletal system, digestive, respiratory and cardiovascular systems; the bold and blood forming elements, the nervous, urinary and dermal systems diseases: clinical signs, diagnosis, treatment and control in pet animlas.		

Course Name: Zoonoses (A)	Credit hours	
Code number: ZON.512	Lectures	Practical
Prerequisite courses:-	2	1(3)
Course contents: Technical terms used in zoonoses; classification of zoonoses; bacterial disaeses, mycotic diseases. Viral diseases, Rickettsial diseases: parasitic diseases (protozoal, trematodiasis, nematodiasis, cestodiasis), arthropod infestation); Rodent control.		

Course Name: Infectious diseases (A)	Credit hours	
Code number: MID.513	Lectures	Practical
Prerequisite courses:- -	2	1(3)
Course contents: Infectious diseases of large ruminants (cattle, buffaloes and camels): Viral, Bacterial, Fungal and Parasitic diseases.		

Course Name: Special Surgery	Credit hours	
Code number: SUR.514	Lectures	Practical
Prerequisite courses:-	2	1(3)
Course contents: Digestive system; Respiratory system; urinary system reproductive. System udder and teat; Ear; Horns Special affections.		

Course Name: Obstetric	Credit hours	
Code number: TGA.515	Lectures	Practical
Prerequisite courses:-	2	1(3)
Course contents: Obstetrics: physiology of pregnancy normal birth normal pueperium Dystocia pathology of pueperium. Abnormalities in pregnancy		

Course Name: Poultry and Rabbit diseases(A)	Credit hours	
Code number: PRD.516	Lectures	Practical
Prerequisite courses:- -	2	1(3)
Course contents: Avian & rabbit diseases caused by viral and mycotic agents; Nutritional deficiency diseases (definition causes, transmission, signs , lesions, diagnosis, control and prevention).		

Course Name: Aquatic animals medicine (Management and aquaculture) (A)	Credit hours	
Code number: AQM.517	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Aquatic animals classification; system of fish management; plan of fish farm and management of fishponds; fish management with ducks, in floating cages and in rice field; problems in fish farms and their control; fish care during transportation; Anatomy and physiological function of fish organs;		

Course Name: Meat and meat products control, Hygiene, safety and Technology (A)	Credit hours	
Code number: FHC.518	Lectures	Practical
Prerequisite courses:- -	2	1(2)
Course contents: The food animals; meat composition and quality; ante-mortem inspection, slaughtering, dressing, postmortem inspection & pathological changes; metabolic diseases & nutritional deficiencies; infections & parasitic diseases; Meat adulteration; Meat laws; legislations & standards & quality assurance.		

Course Name: Zoonoses (B)	Credit hours	
Code number: ZON.521	Lectures	Practical
Prerequisite courses:-	2	1(3)
Course contents: Parasitic diseases (protozoal, trematodiasis, nematodiasis, cestodiasis), arthropod infestation); Rodent control.		

Course Name: Infectious diseases (B)	Credit hours	
Code number: MID.522	Lectures	Practical
Prerequisite courses:- -	2	1(3)
Course contents: Infectious diseases of small ruminants, equines, pet animals and swine; viral, bacterial, Fungal and parasitic diseases.		

Course Name: Lameness	Credit hours	
Code number: SUR.523	Lectures	Practical
Prerequisite courses:-	2	1(3)
Course contents: Lameness in different animals, treatment and surgical interference		

Course Name: Artificial insemination and embryo transfer	Credit hours	
Code number: TGA.524	Lectures	Practical
Prerequisite courses:-	2	1(3)
Course contents: Artificial insemination techniques in different animals and methods of embryo transfer . Introduction of A.I. Semen collection and evaluation. Semen extension. The Frozen semen. Insemination technique. Physiology of spermatozoa in the female genital tract. Embryo transfer. In vitro embryo production (IVEP)		

Course Name: Poultry and rabbit diseases (B)	Credit hours	
Code number: PRD.525	Lectures	Practical
Prerequisite courses:-	2	1(3)
Course contents: Avian & rabbit disease caused by bacterial and parasitic agents (Definition, causes, transmission, signs, lesions, diagnosis, control and prevention) Miscellaneous conditions and management problems; vaccination and vaccination problems.		

Course Name: Aquatic animals medicine (Diseases) (B)	Credit hours	
Code number: AQM.526	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: endoparasitic and ectoparasitic metazoal disease. technical terms for Aquatic animals disease bacterial viral , mycotic and environmental diseases endoparasitic and ectoparasitic protozoal diseases; control of Aquatic animals diseases.		

Course Name: Meat and Meat products control, Hygiene, Safety and Technology (B)	Credit hours	
Code number: FHC.527	Lectures	Practical
Prerequisite courses:-	2	1(2)
Course contents: Poultry hygiene & inspection; fish hygiene & inspection; meat microbiology; food borne illness; technology of meat preservation cooking methods; packing meat additives meat contaminants & toxic residues; animal by products & Biogas production; food safety risk assessment.		

Course Name: Clinical applied Diagnosis & Animal Therapeutics and advanced approaches (Medicine & infectious Diseases)	Credit hours	
Code number: MID.528	Lectures	Practical
Prerequisite courses:-	2	1(3)
Course contents: Different application of new diagnosis and treatment traits in farm animal cases. Application of new versions of vaccination		

General elective courses (GEC)

ب-المقررات العامة

١-مقررات منح الدرجة الجامعية (متطلبات الجامعة الاجبارية)

English language لغه انجليزية	Credit hours	
Code number: GCC.001	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: Reading skills; reviewing, recognizing, perception, analysis, evaluation & comprehending. Writing skills/ thinking & itemizing points, choosing effective phrases, planning, preparing good sentences & better ones, comprehension and revising		

Societal Issues القضايا المجتمعية	Credit hours	
Code number: GCC.002	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: Announcing the students about the updated issues especially human rights and anti-corruptions, environmental, economic , public health and any other issues belongs to the Egyptian society		

Information Technology and communications تكنولوجيا المعلومات والاتصالات	Credit hours	
Code number: GCC.003	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: Artificial intelligence definition, internet, data bases, virtual society , cloud and large data		

Professional Ethics أخلاقيات المهنة	Credit hours	
Code number: GCC.004	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: Medical and veterinary medical ethics. Professional laws and the syndicate rules in Egypt		

المقررات العامة الاختيارية

Programing **البرمجة**	Credit hours	
Code number: GEC.001	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: Bases of programming in soft wares		

Intellectual property rights **حقوق الملكية الفكرية**	Credit hours	
Code number: GEC.002	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: حقوق الملكية الفكرية والابتكار وطرق تسجيل براءات الاختراع		

Marketing and entrepreneurship **التسويق وريادة الاعمال**	Credit hours	
Code number: GEC.003	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: نظم ريادة الاعمال والمشروعات الصغيره وتطبيقات برامج ريادة الاعمال في مجال مشروعات الطب البيطري		

Academic study skills **مهارات الدراسة الاكاديمية**	Credit hours	
Code number: GEC.004	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: المهارات المكتسبة من الدراسة الأكاديمية في مجال الطب البيطري ومجال البحوث العلمية		

Egyptian Identity and personality **الهوية والشخصية المصرية**	Credit hours	
Code number: GEC.005	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: مفهوم وطبيعة الشخصية والهوية المصرية وابعادها التاريخية –دور التاريخ المصري القديم والحديث في تشكيل الهوية المصرية- شخصيه مصر ودورها الاقليمي والدولي		

Quality management systems **نظم اداره الجودة**	Credit hours	
Code number: GEC.006	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: تطبيق طرق اداره الجودة في المؤسسات التعليمية الجامعية		

Human Resource **موارد بشرية**	Credit hours	
Code number: GEC.00٧	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: دراسه الموارد البشريه وطرق تطويرها وتدريبها لخدمه المجتمع المصري		

Business commination **علاقات عامة**	Credit hours	
Code number: GEC.00٨	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: تعريفات العلاقات العامة وتطبيقاتها في مجال التعليم الجامعي والطب البيطري		

Business administration **إدارة الأعمال**	Credit hours	
Code number: GEC.009	Lectures	practical
Prerequisite courses:-	1	-
Course contents: نظم اداره الاعمال في مشروعات الطب البيطري وشركات التعليم الجامعي		

Leadership skills **مهارات القيادة**	Credit hours	
Code number: GEC.0010	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: دراسة انماط القيادة وطرق قياده المؤسسات المحلية والدولية		

First aid skills **مهارات** **الاسعافات الأوليه**	Credit hours	
Code number: GEC.011	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: Identification of first aids and how to apply it in different emergency cases		

Communication skills **مهارات الاتصال** **والعرض**	Credit hours	
Code number: GEC.012	Lectures	Practical
Prerequisite courses:-	1	-
Course contents: دراسه مهارات الاتصال الفعال والعرض الفعال للموضوعات العلميه المختلفه		

Clinical elective courses (CEC)

ج- المقررات الاختيارية الاكلينيكية

Course Name: Veterinary medical sports **الطب البيطري** **الرياضي**	Credit hours	
Code number: CEC.001	Lectures	Practical
Prerequisite courses:-	1	2
Course contents: Training of horses for sports. Care about limbs and its affections. general body fitness		

Clinical and laboratory diagnosis in case of toxicity in animals and poultry التشخيص المعملي والإكلينيكي لعلاج حالات التسمم في الحيوان والدواجن	Credit hours	
Code number: CEC.002	Lectures	Practical
Prerequisite courses:-	1	2
Course contents: treatment of case of toxicity caused by different toxic agents		

Equine diagnostic Imaging الأشعة التشخيصية للخيول	Credit hours	
Code number: CEC.003	Lectures	Practical
Prerequisite courses:-	1	2
Course contents: Application of sonar, MRI, CT and radiology in equine diagnosis		

Ultrasonography (Reproductive) الموجات فوق الصوتية	Credit hours	
Code number: CEC.004	Lectures	Practical
Prerequisite courses:-	1	2
Course contents: Application of sonar in pregnancy diagnosis and reproductive affections		

Course Name: Veterinary physiotherapy العلاج البدني البيطري	Credit hours	
Code number: CEC.005	Lectures	Practical
Prerequisite courses:-	1	2
Course contents: Application of physiotherapy and Veterinary medical care in veterinary field		

Equine Orthopedic Surgery Sport- horse orthopedic diseases جراحة تقويم عظام الخيول وأمراض العظام	Credit hours	
Code number:CEC.006	Lectures	Practical
Prerequisite courses:-	1	2
Course contents: Orthopedics surgery in equines		

Vaccination programs in ruminant برامج التحصين في المجترات	Credit hours	
Code number: CEC.007	Lectures	Practical
Prerequisite courses:-	1	2
Methods of Vaccination programs in ruminant in case of infectious diseases		

Clinical and laboratory diagnosis in reproductive diseases التشخيص الاكلينيكي والمعملي في الامراض التناسلية	Credit hours	
Code number: CEC.008	Lectures	Practical
Prerequisite courses:-	1	2
clinical and laboratory diagnosis in reproductive diseases in farm animals		

Ophthalmology جراحة العيون	Credit hours	
Code number: CEC.009	Lectures	Practical

Prerequisite courses:-	1	2
Course contents: Eye affections and dealing by surgery		

Poultry and rabbits clinical and laboratory diagnosis **تشخيص الاكلينيكي والمعملي في االطيور والارانب**	Credit hours	
Code number: CEC.010	Lectures	Practical
Prerequisite courses:-	1	2
Course contents: Application of clinical and laboratory diagnosis in diseases of poultry and rabbits		

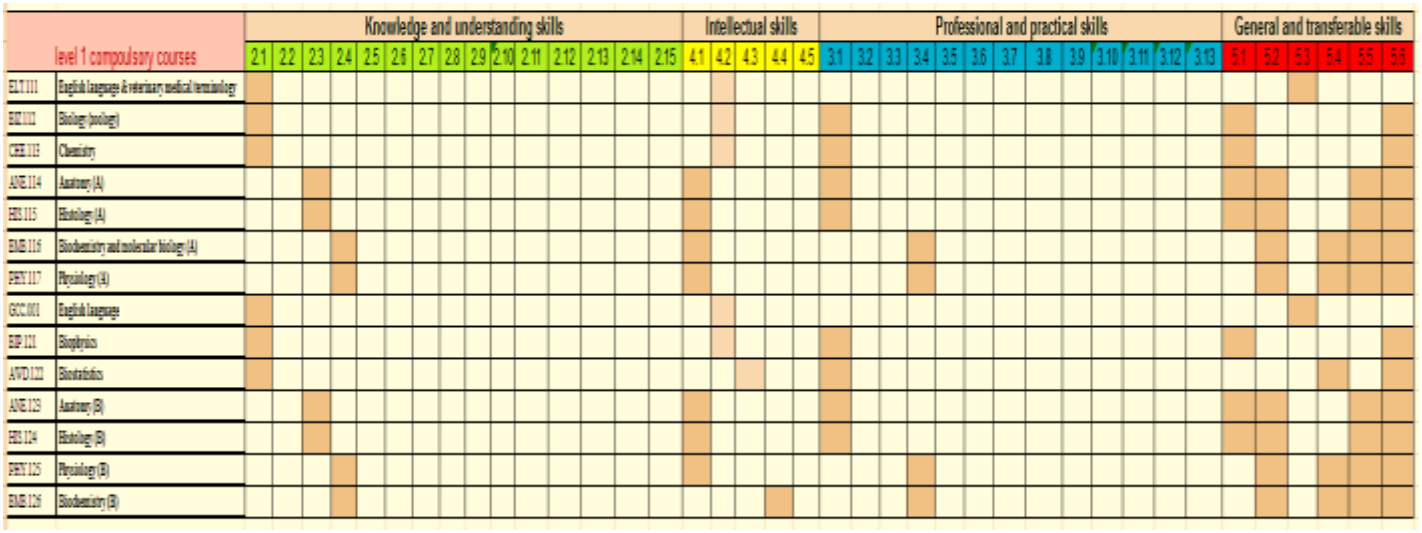
Vaccination programs in pets and equines **برامج التحصين في الحيوانات الأليفة والخيول**	Credit hours	
Code number: CEC.011	Lectures	Practical
Prerequisite courses:-	1	2
Vaccination programs in pets and equines		

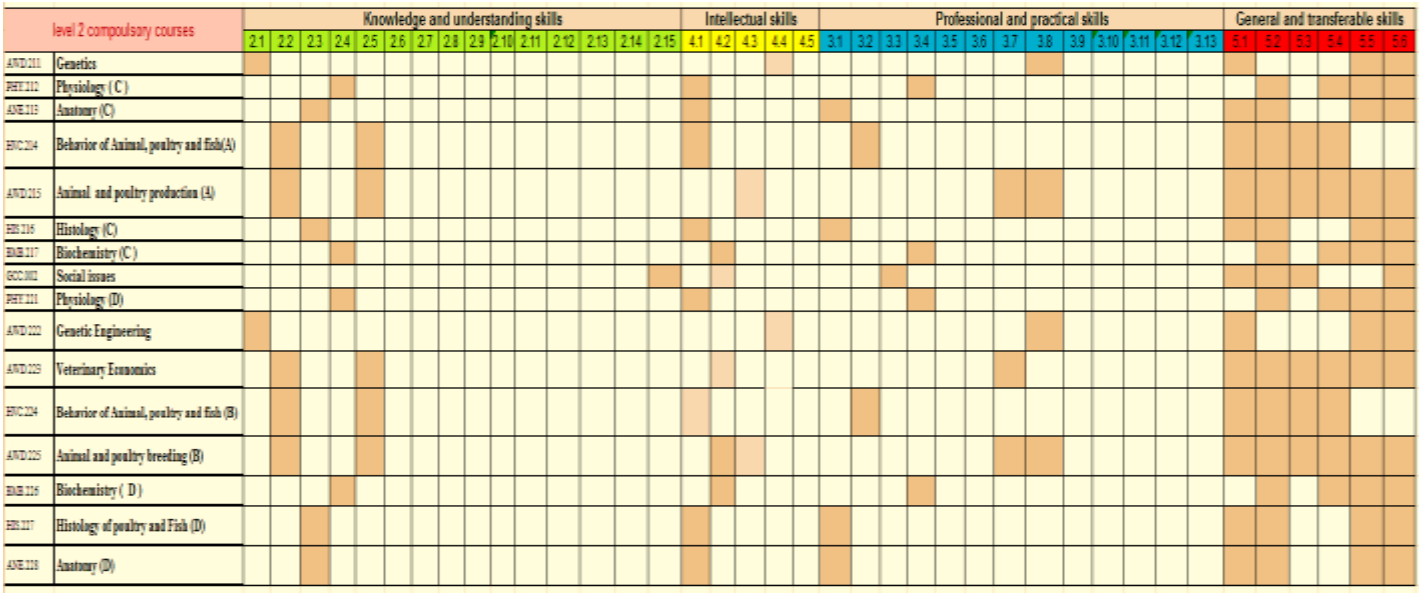
Clinical and laboratories diagnosis of Aquatic Animal diseases and basics of biosecurity in Fish Farm **التشخيص المعملي والاكلينيكي لامراض الاحياء المائيه وأسس الأمان الحيوي**	Credit hours	
Code number: CEC.012	Lectures	Practical
Prerequisite courses:-	1	2
Course contents: Clinical and laboratories diagnosis of fish diseases and application of biosafety and biosecurity		

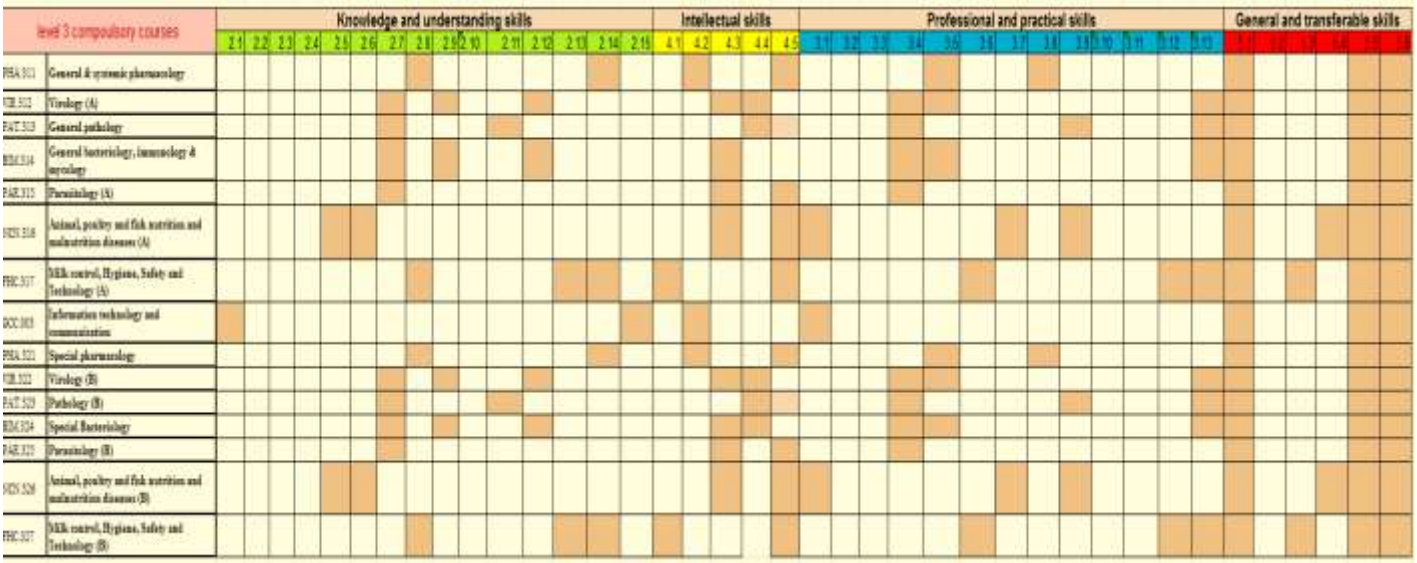
4. Academic Standards

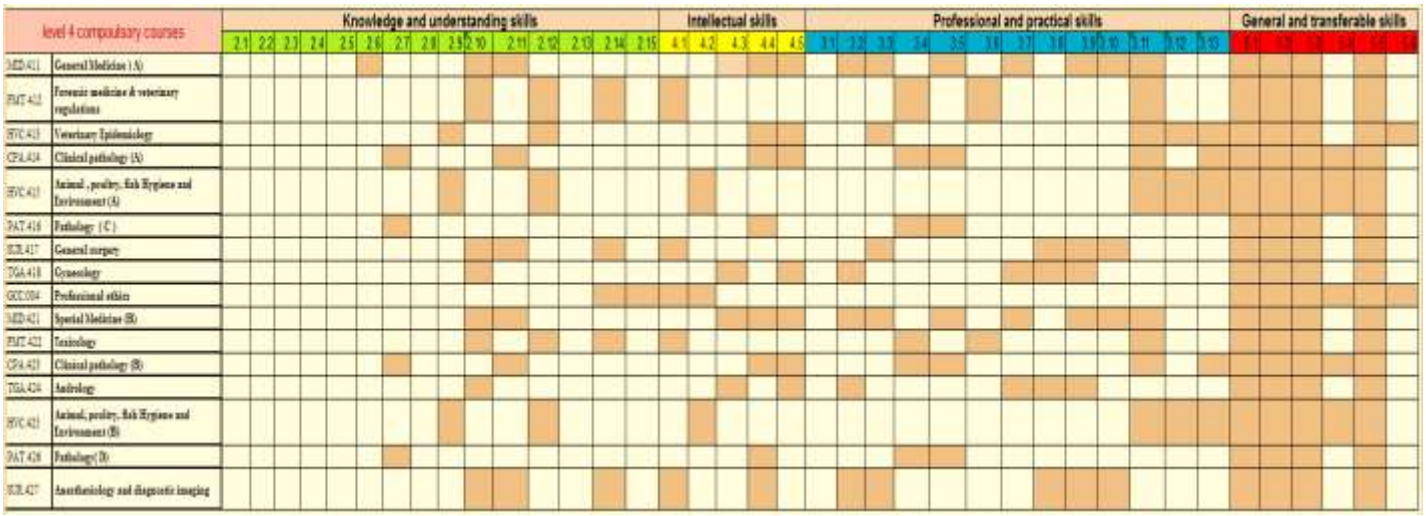
- **Adopted Academic Standards (NARS/ARS): NARS**
  The National Academic References Standards (NARS) for the veterinary sector of higher education in Egypt (Appendix 1) issued by the National authority for Quality Assurance and Accreditation (NAQAAE) (2009) edition 1
- **Date of Adoption of Standards in the governing Council: 6/23/2024**
  ***** NARS were approved by faculty council no (315) since 13-9-2009 and last updated approved by faculty council no (482) on 23/6/2024

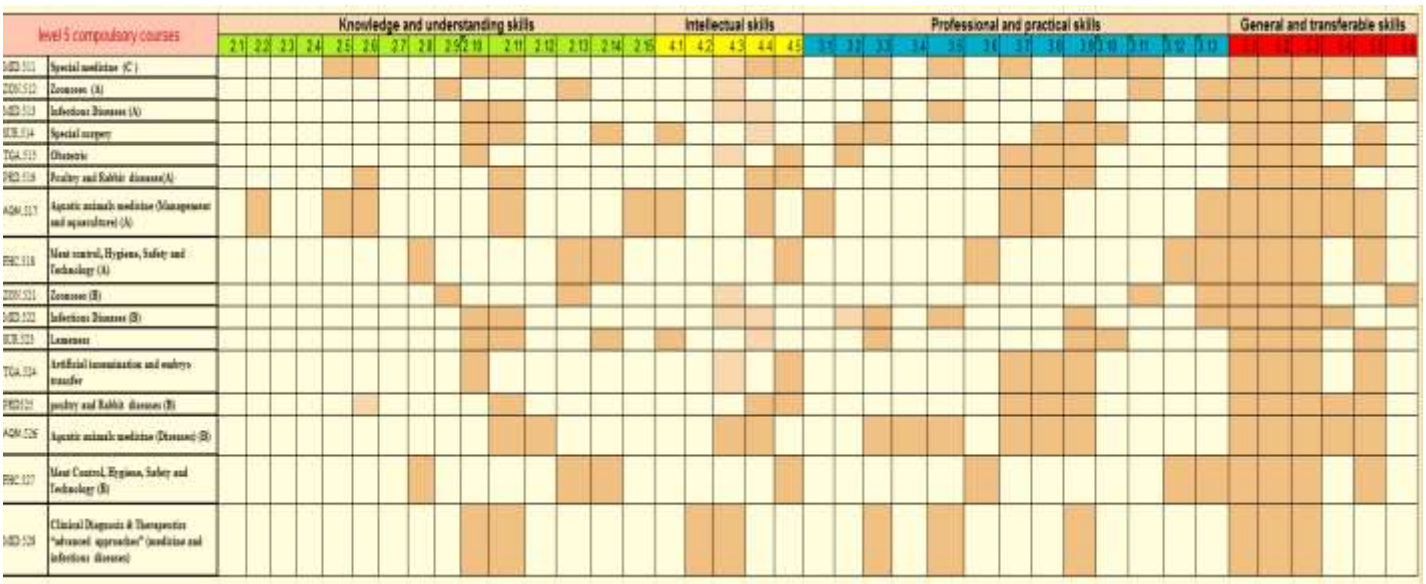
5. Matrix of Academic Standards (Program Outcomes POs) with Courses



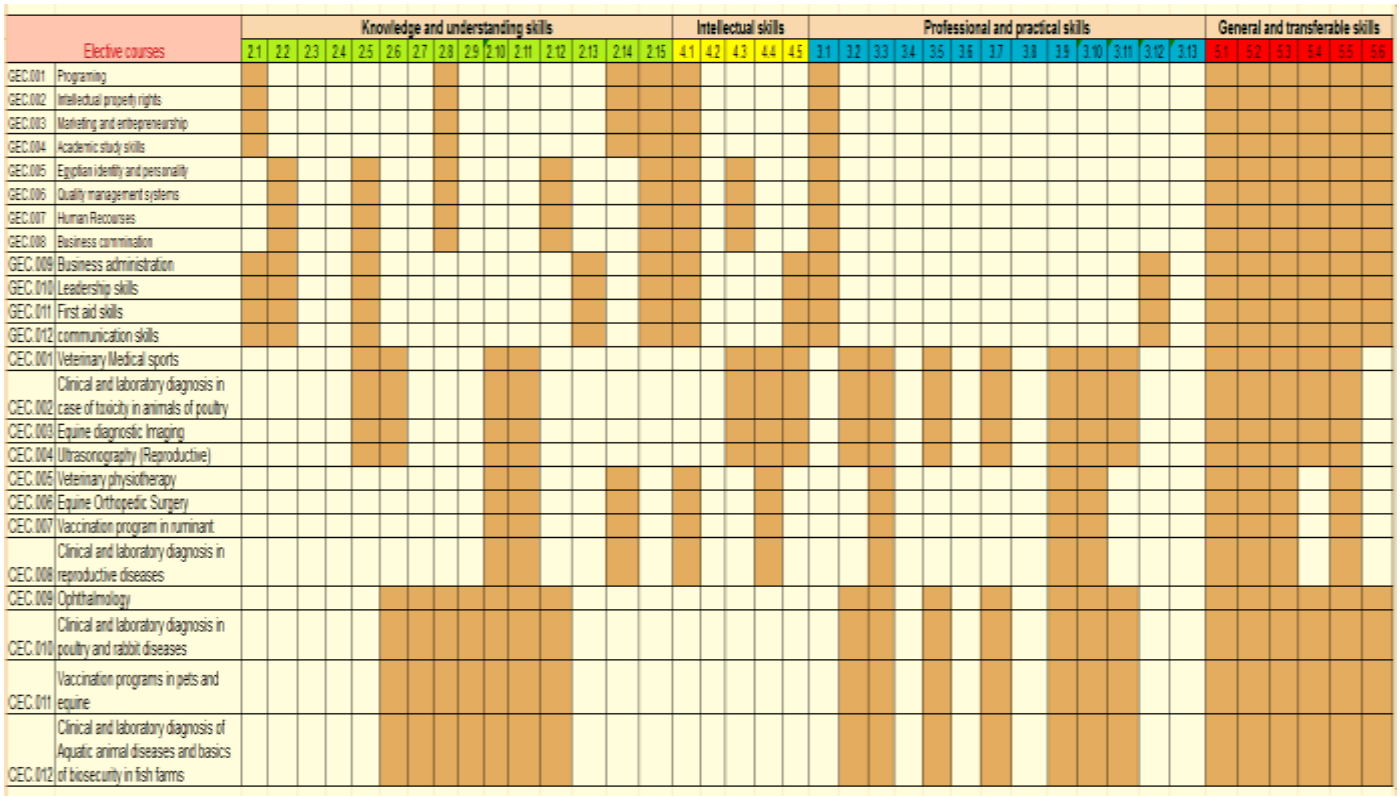



level 3 compulsory courses
Knowledge and understanding skills
Intellectual skills
Professional and practical skills
General and transferable skills
PHA 311 General & systemic pharmacology
VIR 312 Virology (A)
PAT 313 General pathology
BAC 314 General bacteriology, immunology & mycology
PAR 315 Parasitology (A)
NDS 316 Animal, poultry and fish nutrition and malnutrition diseases (A)
FHC 317 Milk control, Hygiene, Safety and Technology (A)
ICC 318 Information technology and communication
PHA 321 Special pharmacology
VIR 322 Virology (B)
PAT 323 Pathology (B)
BAC 324 Special Bacteriology
PAR 325 Parasitology (B)
NDS 326 Animal, poultry and fish nutrition and malnutrition diseases (B)
FHC 327 Milk control, Hygiene, Safety and Technology (B)


level 4 compulsory courses
Knowledge and understanding skills
Intellectual skills
Professional and practical skills
General and transferable skills
MED 411 General Medicine (A)
PMT 412 Forensic medicine & veterinary regulations
EPI 413 Veterinary Epidemiology
CPA 414 Clinical pathology (A)
HYG 415 Animal , poultry, fish Hygiene and Environment (A)
PAT 416 Pathology (C)
SUR 417 General surgery
TGA 418 Gynecology
GCC 004 Professional ethics
MED 421 Special Medicine (B)
PMT 422 Toxicology
CPA 423 Clinical pathology (B)
TGA 424 Andrology
HYG 425 Animal, poultry, fish Hygiene and Environment (B)
PAT 426 Pathology(B)
SUR 427 Anesthesiology and diagnostic imaging


level 5 compulsory courses
Knowledge and understanding skills
Intellectual skills
Professional and practical skills
General and transferable skills
MED 511 Special medicine (C)
ZOO 512 Zoonoses (A)
MED 513 Infectious Diseases (A)
SUR 514 Special surgery
TGA 515 Obstetric
PRD 516 Poultry and Rabbit diseases(A)
AQM 517 Aquatic animals medicine (Management and aquaculture) (A)
FHC 518 Meat control, Hygiene, Safety and Technology (A)
ZOO 521 Zoonoses (B)
MED 522 Infectious Diseases (B)
SUR 523 Lameness
TGA 524 Artificial insemination and embryo transfer
PRD 525 poultry and Rabbit diseases (B)
AQM 526 Aquatic animals medicine (Diseases) (B)
FHC 527 Meat Control, Hygiene, Safety and Technology (B)
MED 528 Clinical Diagnosis & Therapeutics "advanced approaches" (medicine and infectious diseases)

Matrix of elective courses



Elective courses		Knowledge and understanding skills															Intellectual skills					Professional and practical skills												General and transferable skills					
		2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10	2.11	2.12	2.13	2.14	2.15	4.1	4.2	4.3	4.4	4.5	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	5.1	5.2	5.3	5.4	5.5	5.6
GEC.001	Programing	■							■						■	■	■					■													■	■	■	■	■	■
GEC.002	Intellectual property rights	■							■						■	■	■					■													■	■	■	■	■	■
GEC.003	Marketing and entrepreneurship	■							■						■	■	■					■													■	■	■	■	■	■
GEC.004	Academic study skills	■							■						■	■	■					■													■	■	■	■	■	■
GEC.005	Egyptian identity and personality		■			■			■				■			■	■		■			■													■	■	■	■	■	■
GEC.006	Quality management systems		■			■			■				■			■	■		■			■													■	■	■	■	■	■
GEC.007	Human Recourses		■			■			■				■			■	■		■			■													■	■	■	■	■	■
GEC.008	Business communication		■			■			■				■			■	■		■			■													■	■	■	■	■	■
GEC.009	Business administration	■	■			■								■		■	■				■	■											■		■	■	■	■	■	■
GEC.010	Leadership skills	■	■			■								■		■	■				■	■											■		■	■	■	■	■	■
GEC.011	First aid skills	■	■			■								■		■	■				■	■											■		■	■	■	■	■	■
GEC.012	communication skills	■	■			■								■		■	■				■	■											■		■	■	■	■	■	■
CEC.001	Veterinary Medical sports					■	■				■	■							■	■			■	■		■		■		■	■	■				■	■	■	■	
CEC.002	Clinical and laboratory diagnosis in case of toxicity in animals of poultry					■	■				■	■							■	■			■	■		■		■		■	■	■				■	■	■	■	
CEC.003	Equine diagnostic Imaging					■	■				■	■							■	■			■	■		■		■		■	■	■				■	■	■	■	
CEC.004	Ultrasonography (Reproductive)					■	■				■	■							■	■			■	■		■		■		■	■	■				■	■	■	■	
CEC.005	Veterinary physiotherapy										■	■			■		■			■										■	■							■		
CEC.006	Equine Orthopedic Surgery										■	■			■		■			■			■							■	■							■	■	
CEC.007	Vaccination program in ruminant										■	■			■		■			■			■							■	■							■	■	
CEC.008	Clinical and laboratory diagnosis in reproductive diseases										■	■			■		■			■			■							■	■							■	■	
CEC.009	Ophthalmology						■	■	■	■	■	■	■										■	■		■		■		■	■	■				■	■	■	■	■
CEC.010	Clinical and laboratory diagnosis in poultry and rabbit diseases						■	■	■	■	■	■	■										■	■		■		■		■	■	■				■	■	■	■	■
CEC.011	Vaccination programs in pets and equine						■	■	■	■	■	■	■										■	■		■		■		■	■	■				■	■	■	■	■
CEC.012	Clinical and laboratory diagnosis of Aquatic animal diseases and basics of biosecurity in fish farms						■	■	■	■	■	■	■										■	■		■		■		■	■	■				■	■	■	■	■

6. Teaching and Learning strategies/methods to achieve Program Outcomes:

1. Modified lectures
2. Blended learning
3. Discussion
4. Team based learning (TBL)
5. Problem-based learning
6. E-learning
7. Field Trips
8. Case based learning (CBL)
9. Critical Thinking
10. Practical and hospital clinical cases
11. Role Play
12. Simulation
13. Cooperative Task
14. Concept mapping
15. Flipped classroom

7. Student Assessment strategies/methods to verify and ensure students' acquisition of Program Outcomes:

- **Summative assessment**

1. Final Written Exam [MCQ/short notes/case scenario/problem solving]
2. Final Practical or clinical Exam. [OSPE/OSCE]
3. Final Oral Exam [viva cards]
4. Semester work and one hour Mid-term exam [quizzes/class activity and short notes exam]

- **Formative assessment**

1. Quizzes
2. Assignment [presentation/seminars/online assignment]
3. Take home exam
4. Survey
5. Practical/clinical work

Program Admission Requirements**:**

Documents and Credentials Required

Admission Policy

The university follows the rules and regulations of admission set forth by the Supreme Council of Universities.....

Application for Admission

Admission application fees, non-refundable, and must be submitted with all the necessary documents and official papers in their original forms.

A. Freshman Students

1. Completed Application for Admission Form.
2. Official certificate of General Secondary Education (certified and authenticated as required).
3. Birth certificate.
4. 6 personal photographs (passport size).
5. Form "2 GOND" (for male Egyptian Students, can be obtained from the post office).
6. Military card for Egyptians male above nineteen years of age. For those above twenty-two an official document stating the military status should be submitted.
7. Copy of national ID card or passport (for non-Egyptian students)

B. Transfer Students

Applicants transferring from other educational faculties must submit all documents listed above in addition to the following documents:

1. An official transcript from the applicant's former college detailing the Must be curriculum and the official grades obtained. Foreign transcripts must be certified by the issuing institution and authenticated by an Egyptian Embassy or Consulate in the country of origin.
2. A detailed description of all the courses studied, certified by the issuing faculty (authenticated from the Egyptian Embassy for foreign students).

Admitting Certificates

Egyptian General Secondary Certificate (Thanawiya Amma, Scientific branch).
Equivalent Certificates :

Certificates from Arab Countries (Scientific branch):

The following subjects are not included in calculating the general grand total: Islamic studies, physical education, military education, and conduct and al tarbiya alwataniya.

Foreign Certificates:

The British GCSE and IGCSE :
Students applying for admission should meet the following requirements:
The American High School Diploma:
Holders of accredited American high school diploma should meet the following requirements:
Students, who got their high school diplomas from the Arab Republic of Egypt, must have their certificates authenticated from the issuing US institution any international accreditation authority. Certificates authenticated from any institution or authorities that are not listed in the ministerial decree will not be accepted. In addition, they must be authenticated by the Egyptian Cultural Attaché in Washington.

Regulation of Progression and Program Completion:

To be awarded the Bachelor of Veterinary Medicine degree, a student must successfully complete:

a. All faculty compulsory courses: 182 credit hours (73 courses).
b. Clinical elective courses: 3 courses totaling 6 credit hours.
c. General compulsory and elective university courses:

compulsory courses (4 credit hours), included in credit total and GPA.

elective courses (3 credit hours), not included in credit total or GPA but shown on transcript.
d. Internship Year:

Students must successfully complete the internship training rotations as determined by the Faculty Council.

Training consists of 8 hours per day, five days per week, for one academic year after successful completion of Level 5.

Supervisors (faculty members and staff) receive financial compensation, and students receive travel allowances, both as regulated by the Faculty Council.

The final degree classification (GPA) is calculated based on the cumulative grades from all compulsory courses and clinical elective courses only.

Teaching and learning process:

System of Study: The program follows the credit hour system, with teaching hours calculated as follows:
One credit hour is equivalent to one theoretical hour or 2–3 practical hours per week throughout the semester, in accordance with the attached schedules.
The academic year is divided into two semesters, each lasting 15 weeks, in addition to an intensive summer semester that begins on the first Saturday of July.
Enrollment in the summer semester is optional and primarily intended for students who were failed or postponed or absent from courses.

Course registration for any academic level must be completed within two weeks prior to the start of each semester, after fulfilling the required conditions.

Academic Advising: The Faculty Council, upon the nomination of the Vice Dean for Education and Student Affairs, appoints an academic advisor from among the faculty members for every 10–20 students upon their enrollment in the program.
The academic advisor's responsibilities include:

- Monitoring student performance and assisting in course selection and credit hour load based on academic results.
- Advising students to reduce their course load to the minimum credit requirement if their GPA falls below 1.0 in any semester.
- Reviewing the student's performance in previously completed courses.
- Maintaining direct communication with students and helping resolve any academic or personal issues encountered during their studies.

Academic Load: The academic load for any student is between a minimum of 10 credit hours and a maximum of 28 credit hours (or the number of credits specified in the college study plan). However, the maximum load depends on the student's academic record. If the student's CGPA is less than 1.0 his load will be lowered until he is able to raise it to the accepted standard.

Registration: Students must register during the official registration period at the times announced in the university calendar. After payment of faculty registration fees, each student receives an Offered Courses Sheet which contains necessary information such as:

- Number of credits earned
- CGPA
- Level of study
- Number of allowed hours for registration
- Available courses for registration.

In the light of these data students should consult with their academic advisors before selecting the courses for registration. Registration is available via ibn haithm program through our website except for those whose CGPA falls below 1.00. Such students must register through their advisors.

Class Attendance Regulations: Students should attend all classes for which they are registered to obtain maximum educational benefits. Absence or lateness does not excuse students from required courses work. Students whose absence record exceeds 25% of practical course hours are not allowed to sit in for the final exam and will receive a failing grade (F) in that course.

Drop and Add Courses: During the first two weeks at the beginning of each semester, students are allowed to change their registration by adding or dropping courses after consulting their academic advisors— provided they do not exceed the maximum credits or fall below the minimum allowed. Check the university calendar for the drop and add period.

Course Withdrawal: Students may withdraw from a particular course (or courses) if they find (through quizzes and mid-term exams) that they will be unable to complete that course successfully. In such case, the student may file a Withdrawal Form after consulting the academic advisor and the course instructor. Courses withdrawn before the deadline for course withdrawal will have a (W) in the grade report. These courses are not counted toward graduation and their credits are not used to compute the GPA.

Withdrawal from a Semester: it is the formal termination of a student's complete registration in all courses for the semester. The student must file a petition stating the reason for withdrawal from all courses and seek the approval of the college dean. A Withdrawal Form has to be filed so that these courses may have a (W) in grade report. A student may be excused for not registering or for withdrawing from all courses registered up to three times during the entire period of his study MUST provide his excuses are accepted by the dean or college council.

Incomplete:

In very rare cases, if a student is faced with unexpected circumstances that might prevent him from attending the final exam in any course, he/she must file a petition requesting an incomplete (IC) in that course according to the following conditions:

1. The college dean must be informed of the excuse within 48 hours of the exam date.
2. The student must have a passing grade in the coursework for that course to qualify for incomplete.
3. All medical excuses shall be referred to the University medical adminstration for examination.
4. In case of the death of a close relative (a parent, a brother or sister) a death certificate must be submitted.
5. If the student's petition for incomplete is accepted, the student must attend the incomplete exam at the date and time specified by the college before the end of the drop and add the following semester or summer session. Failure to do so will result in receiving an (F) grade in the course.

Distribution of Marks & Examination Systems:

A student's success in a course is usually based on the combination of a grade given for the semester class work and a grade for the final examination. The grade for the semester class work is 50% of the total, with 50% for the final examination grading. The pass mark in each course is 50%.

Semester work	Final exam	Total	pass mark in each course
50%	50%	100%	50%

Grading System

A student's academic standing for a semester is expressed by the grade point average (GPA). Semester grades are reported by letter and the corresponding percentage. The grading system is as follows:

Percentage	**Grade**	**Grade**	**Grade Points** ***per credit***
95 - 100	A+	Excellent +	3.70 to 4.00
90 – 95	A	Excellent -	3.40 to 3.70
85 - 90	A–	Excellent	3.10 to 3.40
80 - 85	B+	Very Good +	2.80 to 3.10
75 - 80	B	Very Good	2.50 to 2.80
70- 75	C+	Good +	2.20 to 2.50
65- 70	C	Good	1.90 to 2.20

60 - 65	D+	Pass +	1.60 to 1.90
55 - 60	D	Pass	1.30 to 1.60
50 - 55	D -	Pass -	1.00 to 1.30
Less than 50	F	Fail	----------
IC	I	Incomplete	----------

Grade Point Average GPA and CGPA

Grade point Average (GPA) is computed each semester to show the student's academic standing. It is computed by multiplying each course credits by the grade points corresponding to the grade received, then adding all points earned and dividing the total by the number of credits in the semester .As the student progresses in his study, his transcript will show a grade point average for each semester as well as a cumulative grade point average CGPA of all courses taken in different semesters. Students should earn a successful grade in each course studied.On graduation a general CGPA is calculated by adding the grade points for all courses studied and dividing the grand total by the total number of credits required for graduation.

Repeating Courses

If the student fails in a course taken grade F he /she is required to repeat the course. If he/ she passes the course the new grade replaces the F and GPA is readjusted.

Program evaluation

Evaluator	Method	Sample Size
1- Final year students (Senior Graduates)	**Questionnaire Review of assessment and Review of examination results**	**At least 50%**
2- Graduates	**Interview, questionnaires, depth meeting**	**At least 50%**
3- External evaluator	**Report**	**At least one per 2 years**
4- Internal evaluator	**Report**	**At least one per year**
5- Stakeholders & employees	**Questionnaire, Focus groups**	**Veterinary companies**
6- Other academic leaders of the faculty	**Meetings Focus groups**	**Dean and Vice dean**

8. Program Key Performance Indicators (if any)

No.	Performance Indicator	Target Level	Method	Measurement
1.	Percentage of achieved objectives for program improvement and development plan	≥90%	Percentage of results of the educational program evaluation questionnaire for students	Annually
2.	Number of enrolled students	≥0	Statistical analysis of training	Annually

No.	Performance Indicator	Target Level	Method	Measurement
			impact questionnaires (for students) from training providers	
3.	Staff: student ratio	1:25≥	Statistical analysis of training impact questionnaires (specific to training institutions) on students	Annually
4.	Quality of program specification	≥90%	Percentage of results of the educational program evaluation questionnaire by (final year students and graduates) regarding learning resources	Annually
5.	Quality of courses specification	≥90%	Percentage resulting from the statistical analysis of the student opinion survey questionnaire on college services	Annually
6.	Success rates for students	≥85%	Total number of scientific theses and scientific research published by faculty members annually	Annually
7.	Percentage of graduates	≥90%	The result of dividing the total number of annual scientific theses and research papers by the number of faculty members for this academic year	Annually
8.	Effectiveness of teaching, learning and assessment methods	≥85%	Outside the division of the total local research by the international research published in the same academic year	Annually
9.	Quality of training	≥80%	The result of dividing the total number of annual international publications by the number of faculty members for that academic year.	Annually
10.	Impact of training	≥80%	Statistical analysis of the number of community activities in which faculty members and support staff participate	Annually

No.	Performance Indicator	Target Level	Method	Measurement
11.	Efficiency of learning resources and material resources	≥80%	Percentage of results of the educational program evaluation questionnaire for students	Annually
12.	Student satisfaction with services and effectiveness of student support	≥80%	Statistical analysis of training impact questionnaires (for students) from training providers	Annually
13.	Number of Research production for the faculty	≥200	Statistical analysis of training impact questionnaires (specific to training institutions) on students	Annually
14.	Average research production of faculty members	≥2	Percentage of results of the educational program evaluation questionnaire by (final year students and graduates) regarding learning resources	Annually
15.	Ratio of international publication to local publication of scientific research	≥1:2	Percentage resulting from the statistical analysis of the student opinion survey questionnaire on college services	Annually
16.	Average international faculty publication	≥1.5	Total number of scientific theses and scientific research published by faculty members annually	Annually
17.	Rate of community activities	≥85%	The result of dividing the total number of annual scientific theses and research papers by the number of faculty members for this academic year	Annually

Name & Signature
Program Coordinator

Prof.Dr. Mahmoud A. Abu-Elroos

Name & Signature
Vice Dean for Education and Student Affairs

Prof.Dr. Hossam F. Attia