Program Title: Master in Veterinary Medical Sciences

(Animal Behavior and Management)

A. ADMINISTRATIVE INFORMATION

University:	**Sadat City**
Faculty:	**Veterinary Medicine**
Program title:	**Master in Veterinary Medical Sciences (Animal Behavior and Management)**
Final award:	**MVSc Degree (Animal Behavior and Management)**
Registration period	**2-4 years. An extension for a maximum of 2 years could be approved.**
Department responsible:	**Husbandry and Animal Wealth Development**
Program Coordinators	**Prof. Dr. Hamada D.H. Mahboub**
External evaluator:	**ا.د. أسامه السيد محروس أستاذ السلوكيات جامعة دمنهور**

B. PROFESSIONAL INFORMATION

1) Overall aims of program

- Provides graduates the opportunity to develop communication and teaching skills and the experience of scientific research.
- Develops the ability of graduate to engage critically with recent techniques and tools in the field of Animal, Poultry and Fish Behavior and Management.
- Supplies the graduates with the most recent knowledge in science and technological applications in Animal, Poultry and Fish Animal, Poultry and Fish Behavior and Management.
- Demonstrates an awareness of the connections between disciplines and develop the ability to engage critically with scientific literature and to critically review and present their own research data for the protection and promotion of the Animal, Poultry and Fish Behavior and Management.
- Allows graduates to develop practical research project.
- Enables graduates to achieve competency in modern Animal and Poultry Behavior and Management technology.

2) Academic standards

Academic reference standards (ARS) adopted by the Faculty committee No 152 (18-6-2014).

3) Graduate attributes

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

The graduate should have the ability for:

(1 Perfect application of scientific research basics and methodologies in Animal, Poultry and Fish Behavior and Management, and using its various tools.

(2 Application and use of analytical methodology in the field of Animal, Poultry and Fish Behavior and Management.

(3 Application of gained specialized knowledge and integrating them with the relevant knowledge in Animal, Poultry and Fish Behavior and Management.

(4 Awareness with current problems and recent visions in Animal, Poultry and Fish Behavior and Management.

(5 Identification of animal, poultry and fish behavioral and managerial problems suggesting suitable and economic solutions.

(6 Mastering an appropriate scale of specific professional skills, and using suitable technological means to serve professional practice.

(7 Effective communication with students, animal breeders and owners of animal, poultry and fish farms and leading work team.

(8 Decision making in various animal and poultry production contexts.

(9 Employment of the available resources efficiently to improve animal, poultry and fish performance and solving their behavioral problems.

(10 Awareness with his role in society development and to understand animal,

poultry and fish behavior and their proper management to achieve high productivity as well as animal welfare, with preservation of a clean environment..

(11 Reflection of the commitment to act with integrity, credibility and the rules of profession.

(12 Academic and professional self- development and ability for life-long learning and progress.

4) Intended learning outcomes of course (ILOs)

a) Knowledge and understanding

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

a.1. Explain different theories and principles in the field of animal, poultry and fish behavior and management and related fields.

a.2. Identify the impact of different management systems on animal, poultry and fish behavior and performance and its reflection on the environment

a.3. Distinguish the scientific developments in the field of animal, poultry and fish behavior and management.

a.4. Demonstrate the ethical and legal principles for professional practice in the field of animal, poultry and fish behavior and management.

a.5. Realize the principles and basics of quality assurance in the area of animal, poultry and fish behavior and management.

a.6. Apply the basics and ethics of scientific research in the field of animal, poultry and fish behavior and management

a.7. Realize the legal and ethical basics in the field of animal, poultry and fish behavior and management

b) Intellectual skills

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

b.1. Analyze and judge the methods of behavior measuring, information collected from animal, poultry and fish farms on the basis of behavioral and performance indices.

b.2. Determine an accurate approach to behavioral and managerial problems and find the solution based on the available data.

b.3. Relate between the various sources of knowledge to solve abnormal animal behavior and management problems in different animal, poultry and fish systems.

b.4. Develop a research proposal in the field of animal, poultry and fish behavior and management and/ or write scientific article on a research problem.

b.5. Assess risks of professional practices in animal, poultry and fish behavior and management and their possible consequences.

b.6. Plan to maximize welfare as well as performance of animal, poultry and fish in different management systems.

b.7. Make professional decisions and suggestions in dealing with behavioral and productive problems in animals, poultry and fish.

c) Professional and practical skills

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

c.1. Master the fundamental and recent professional skills in the field of animal, poultry and fish behavior and management.
c.2. Write and assess professional and conclusive report about the animal, poultry and fish behavior and management.
c.3. Assess the existing methods and tools in the field of animal, poultry and fish behavior and management.
c.4. Plan a research project in the field of animal, poultry and fish behavior and management with a consideration to the technical, ethical and safety issues and associated costs..
c.5. Perform essential skills that underpin techniques associated with experimental design, collecting, summarizing, organizing, presenting and analyzing data

d) General and transferable skill

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

d.1. Communicate effectively with his professors, collages and animal owner(s).
d.2. Utilize different sources of knowledge and information.
d.3. Assess him-self and identify his personal educational needs.
d.4. Demonstrate interpersonal skills and team working ability
d.5. Demonstrate an ability to learn independently for a career of lifelong learning.
d.6. Use information technology to serve the professional practice.
d.7. Manage time efficiently.
d.8. Set tools and indicators for assessment of the performance of others.

5) Program structure:

a) Premaster courses – at least one academic year

	Lecture (hours/week)	Practical (hours/week)
Fundamental (core) course	3	4
Research methodology	1	3
3-4 Elective Courses (10-12 hours)	Offered by other departments and are selected from the list below according to thesis topic	

b) MVSc Thesis (at least one academic year)

- All master-degree students should prepare a master thesis.
- The department and the ethical committees must approve the protocol of the research.
- The thesis should include a review part and a research part.

- The thesis is supervised by one or more senior staff members of the department responsible for the program and may include other specialties according to the nature of the research.
- The thesis should be evaluated and approved by a committee of three professors including one of the supervisors and an external professor.

Elective Courses for master students				
Code	**Course**	**Hours/week**		**Department**
		Lecture	**Practical**	
601	Applied anatomy	2	2	**Anatomy & Embryology**
602	Arterial & nerve supply, and surface anatomy	2	2	
603	Osteology and arthrology	2	2	
604	Comparative digestive system	2	2	
605	Comparative urogenital system	2	2	
606	Comparative respiratory System	2	2	
607	Comparative cardiovascular system, lymphatic system and heart	2	2	
608	Comparative nervous system and endocrine glands	2	2	
609	General and special embryology	2	2	
610	Avian anatomy	1	2	
611	Cytology and cytochemistry	2	2	**Cytology and histology**
612	General histology	2	2	
613	Histological and histochemical structure of blood, lymphatic & cardiovascular systems and heart	2	2	
614	Histological and histochemical structure of respiratory system	2	2	
615	Histological and histochemical structure of digestive system	2	2	
616	Histological and histochemical structure of urogenital system	2	2	
617	Histological and histochemical structure of nervous system and endocrine glands	2	2	
618	Histological and histochemical structure of integument, hoof, claws and nails	2	2	
619	Avian histology	2	2	
620	Circulatory and immune systems	2	2	
621	Physiology of endocrine glands & reproduction in mammals	2	2	**Physiology**
622	Avian physiology (advanced)	2	2	
623	Fish physiology	1	2	
624	Nerve and muscle physiology	2	2	
625	Ruminant physiology	2	2	
626	Physiology of environment, adaptation, and cell	2	2	
627	Physiology of blood and immunity system	2	2	
628	Physiology of digestion, metabolism and energy	2	2	
629	Physiological changes associated with pollution	1	2	
630	Radioisotopes and their biological uses	2	2	
631	Biochemistry (advanced)	2	2	**Biochemistry and Chemistry of Nutrition**
632	Metabolism	1	2	
633	Biochemistry of tissues and body fluids	2	2	
634	Biochemistry of hormones and reproduction	2	2	
635	Chemistry of nutrition	2	2	
636	Clinical biochemistry	2	2	

637	Avian biochemistry	2	2	
638	Fish biochemistry	2	2	
639	Microbial biochemistry and biotechnology	2	2	
640	Radiation biochemistry	1	2	
				Husbandry and Animal Wealth Development
649	Animal nutrition (advanced)	2	2	**Nutrition and Clinical Nutrition**
650	Feed stuffs (components and additives)	2	2	
651	Farm animals and fish nutrition	2	2	
652	Birds and rabbit nutrition	2	2	
653	Nutrition of wild animals	1	2	
654	Laboratory animal nutrition	1	2	
655	Feed stuff analysis	2	2	
656	Feeds and feed industry hygiene	2	2	
657	Clinical nutrition	2	2	
659	General pathology and oncology (advanced)	2	2	**Pathology**
660	Pathology of microbial and parasitic animal diseases	2	2	
661	Pathology of nutritional deficiencies	1	2	
662	Environmental pathology	1	2	
663	Pathology of reproduction	1	2	
664	Pathology of poultry	2	2	
665	Fish pathology	1	2	
666	Experimental Pathology	1	2	
667	Toxicological pathology	2	2	
668	Surgical pathology	2	2	
669	Clinical pathology (advanced)	2	2	**Clinical Pathology**
670	Evaluation of organ functions, body fluids balance and urine	2	2	
671	Diagnosis of hematological disorders and bone marrow investigation	1	2	
672	Bacteriology (general)	1	2	**Bacteriology, Mycology and Immunology**
673	Bacteriology (special)	2	3	
674	Immunology (advanced)	1	2	
675	Mycology (advanced)	2	3	
676	Microbiology of fish	2	2	
677	Microbiology of birds and rabbits	1	2	
678	Microbiology of invertebrates	1	2	
679	Diagnostic microbiology	2	2	
680	General virology	1	2	**Virology**
681	Special virology	2	2	
682	Viral immunology	1	2	
683	Viral vaccines	2	3	
684	Veterinary medical entomology	2	2	**Parasitology**
685	Helminthology	2	2	
686	Protozoology	2	2	
687	Parasites of birds	2	2	
688	Parasites of fish	2	2	
689	Snails and their veterinary significance	1	2	
690	Parasitic immunology	1	2	
691	Clinical parasitology	2	2	

692	Parasites of wild animals	1	2	
693	Specific parasitology (advanced)	2	2	
694	Veterinary pharmacology (General Advanced)	2	2	**Pharmacology**
695	Veterinary pharmacology, autonomic nervous system and local hormones	2	2	
696	Veterinary pharmacology and CNS	2	2	
697	Veterinary pharmacology and anaesthesia	2	2	
698	Veterinary pharmacology and systems	2	2	
699	Veterinary pharmacology and metabolism	2	2	
700	Pharmaceutical hormones	2	2	
701	Chemotherapy	2	2	
702	Drug toxicity	1	2	
703	Biological evaluation of drugs	1	1	
704	Dairy hygiene and control (advanced)	2	2	**Food hygiene**
705	Dairy microbiology	2	2	
706	Dairy technology and preservation	2	2	
707	Food analysis (specific courses)	2	2	
708	Specific courses in milk contamination and diseases transmitted by milk and hygiene of eggs, oils and fats	1	2	
709	Food poisoning	1	2	
710	Hygiene and control of dairy plants	2	2	
711	Hygiene of slaughter animal	1	2	**Food hygiene**
712	Hygiene and management of abattoirs	2	2	
713	Meat Hygiene and control	2	2	
714	Bird and rabbit meat hygiene	1	2	
715	Food technology	1	2	
716	Food microbiology	2	2	
717	Microbiology of animal byproducts	1	1	
718	Microbiology of fish and crustaceans	1	2	
718	Meat and fish analysis	1	2	
719	Hygiene and control of meat and fish plants	2	2	
720	General medicine (advanced)	2	2	**Medicine and infectious diseases**
721	Ruminant animal medicine	2	2	
722	Equine medicine	2	2	
724	Pet animal medicine	2	2	
725	Wild animal medicine	2	2	
726	Metabolic diseases	2	2	
727	Nutritional deficiency diseases	2	2	
728	Dermal diseases	1	2	
729	Diseases of newly born animals	2	2	
730	Cattle infectious diseases	1	2	**Medicine and infectious diseases**
731	Sheep and goat infectious diseases	2	2	
732	Camel infectious diseases	2	2	
733	Equine infectious diseases	2	2	
734	Pet animal infectious diseases	2	2	
735	Laboratory animal infectious diseases	1	2	
736	Udder and calve infectious diseases	2	2	
737	Buffalo infectious diseases	1	1	
738	Wild animal infectious diseases	1	1	
739	Forensic medicine and veterinary regulations	2	2	**Forensic Medicine, Toxicology, ,and Veterinary regulations**
740	General toxicology	2	2	
741	Environmental toxicology	2	2	
742	Forensic toxicology	2	2	
743	Clinical toxicology	2	2	

744	Gynaecology (specific courses for ruminants, equines and pet animals)	2	2	**Theriogenology**
745	Andrology (specific courses for ruminants and pet animals)	2	2	
746	Obstetrics and diseases in animals	2	2	
746	Reproduction and immunity	1	2	
747	Artificial insemination in ruminants	2	2	
748	Artificial insemination in equines	2	2	
749	Artificial insemination in birds and pet animals	1	2	
750	Artificial insemination in rabbit	1	2	
751	Embryo transfer	1	2	
752	obstetrics and artificial insemination in wild animals	1	2	
753	General surgery (advanced)	2	2	**Surgery, Anesthesiology and Radiology**
754	Special surgery (organs)	2	2	
755	Ophthalmic surgery	2	2	
756	Surgery of the digestive system	2	2	
757	Surgery of limbs and diseases of hoof & claw	2	2	
758	Experimental surgery	2	2	
759	Anesthesiology	1	1	
760	Diagnostic imaging	2	2	
761	Bacterial diseases of poultry	2	2	**Bird and Rabbit Medicine**
762	Viral diseases of poultry	2	2	
763	Mycotic diseases of poultry	2	2	
763	Parasitic diseases of poultry	1	2	
764	Nutritional deficiency diseases	1	2	
765	Wild and migratory birds diseases	1	2	
766	Rabbits diseases (advanced)	2	2	
767	Prevention in poultry field	2	2	
768	Laboratory diagnosis of poultry diseases	2	2	
769	Farm animal hygiene (advanced)	2	2	**Hygiene and Zoonoses**
770	Poultry hygiene (advanced)	2	2	
771	Environmental hygiene and pollution	2	2	
772	Combating epidemic diseases	2	2	
773	Control of pests and disease vectors	2	2	
774	Insecticides and animal hygiene	2	2	
775	Animal farm hygiene	2	2	
776	Disinfection and disinfectants	2	2	
777	Epidemiology of animal and bird diseases	2	-	
778	Zoonoses – advanced	2	2	**Hygiene and Zoonoses**
779	Role of rodents in transmission of zoonotic diseases	2	2	
780	Role of wild animals in transmission of zoonotic diseases	2	2	
781	Epidemiology of zoonotic diseases	2	-	
782	Prevention and control of zoonotic diseases	2	-	
783	Role of aquatic animals and fish in transmission of zoonotic disease	2	-	
784	Genetic of microorganisms	1	2	**Husbandry and Animal Wealth Development**
785	Genetic engineering (advanced)	1	2	
786	Cytogenetics	1	-	
787	Population genetics (advanced)	2	-	
788	Physiological genetics	2	-	
789	Biochemical and radiation Genetics	1	2	
790	Advanced animal breeding and improvement (advanced)	2	-	**Husbandry and Animal Wealth Development**
791	Advanced poultry breeding and improvement (advanced)	2	-	
792	Advanced cattle and buffalo production (advanced)	2	2	
793	Advanced sheep and goat production (advanced)	2	2	

794	Advanced poultry production (advanced)	2	2	
795	Advanced rabbit production (advanced)	2	2	
799	Economics of production and dairy farms	2	-	**Husbandry and Animal Wealth Development**
800	Economics of poultry farms	2	-	
801	Economics of fish farms	2	-	
802	Feasibility studies	2	-	
803	Animal farm management	2	-	
804	Economics of beef production farms	2	-	
811	Microbial aquatic diseases (specific courses)	3	3	**Fish Medicine and Management**
812	Parasitic aquatic diseases (specific courses)	3	3	
813	Non-infectious aquatic diseases (specific courses)	3	3	
814	Epidemiology of aquatic diseases	2	1	
815	Aquaculture	3	1	
816	Special studies in aquatic sciences	2	2	

6) Teaching and Learning Methods

The program features a variety of teaching approaches for different intended learning objectives including:

a. Lectures to gain knowledge and understanding skills.
b. Practical sessions for the students to gain practical skills.
c. Self-learning activities.

7) Student assessment

The program depends on different assessment ways:

a. <u>Course assessment:</u>

- Written exam to assess knowledge, information and intellectual skills.
- Practical exam to assess professional and practical skills.
- Oral exam to assess knowledge and information and intellectual skills.
- Student activities for assessing knowledge and general and transferable skills.

b. <u>Master Thesis</u>

- Annual reports adopted by the Faculty
- Finally, the assessment of thesis measure the individual student ability to work independently in the field specialization
- Final evaluation and approval by a judging committee of at least three professors including one or more of the supervisors and an external professor. This assesses the ability to write a review article, perform the needed practical steps and to present the results in tables and graphs. In addition, the skills of analysis of results and discussion with previous findings obtained by other authors are also assessed

Assessment of program intended learning outcomes

Tool or method	ILOs
Written	a1,2,3,4,5,7; b1,2,3,5,7
Oral	a1,2,5,6; b2,3,4,6
Practical	b1,7; c1-ᵒ
Assignments	a1,2; b4; d1-8
Thesis	A1-7; b1-7; c1-5; d1-8

8) 6-Score classification:

Excellent	At least 90% and more
Very good	At least 80% and less than 90%
Good	At least 70% and less than 80%
Pass	At least 60% and less than 70%
Fail	Less than 60%

9) Program admission requirements

- The Applicant must normally satisfy the Faculty of Veterinary Medicine University of Sadat City general entrance and requirement. The normal minimum entrance qualification for registration at the Faculty on a master's program:
  - Bachelor degree in Veterinary Medical Sciences of one of the Egyptian Universities or hold a degree in Veterinary Medical Sciences equivalent through the Supreme Council of Universities with general grade at least "Good" and at least grade "Very Good" in specialization.
  - Diploma of general grade at least "Good" and at least grade "Very Good" in specialization. The total number of study hours must be not less than 3 weekly in that specialization.

10) Regulations for progression of program

a) Registration period for the MVSc in Veterinary Medical Sciences is at least 2 years after the approval date by the Faculty council, one year for studying the courses and another for performing research and preparing the thesis. The registration period should not exceed 4 years. An extension for a maximum of 2 years could be approved by the Faculty council depending on the supervisor report approved by the department council and the postgraduate and research committee in the Faculty. The total period must not be more than 6 years.

b) The general conditions for having a master degree in Veterinary Medical Sciences include:

1) The student should conduct the 5-6 courses proposed by both department council and approved by postgraduate and research committee and Faculty council. The student will entitled to apply for the exam only after meeting attendance rate for each course. These courses must include:

- Fundamental (core) course offered by the department responsible for the program (lectures: 3 hours/week; practical: 4 hours/week).
- Research methodology (lectures: 1 hour/week; practical: 3 hours/week).
- 3-4 elective courses (10-12 total hours/week) offered by other departments and are selected according to research nature.

2) The student should pass written, practical and oral exams successfully in all courses. Examination is held twice a year (December and April).

- Failure or depriving from entering one or more course did not requires reexamination of successful passed courses.
- Each student has 4 chances to enter the exams, and the Faculty council should deprive the student from entering the exam if his attendance rate in the course is less than 75%.
- Time of written exam is 3 hours if the total study hours of the course are 3 hours or more per week. In case of a course with total study hours less than 2 per week, the time of written exam is 2 hours
- The final marks for each course having 3 study hours (lecture and practical) per week is 100 and 50 marks for any course with less than 3 study hours. The marks are divided into 50% for written exam, and 50% for both practical and oral exams.

3) The student must prepare a master thesis accepted by the judging committee in an open discussion. The master certificate must indicate the thesis topic and the field of specialization.

c) <u>General rules</u>

1) Applications for registration should be sent during March and September each year.

2) The applicant should submit a request enrolment for the Faculty dean who forwards it to the concerned department council to determine the research subject and the study program and then take calendar after complete documentation on the Faculty council for approval.

3) The thesis title should be identified at least 2 months before being submitted, and the judging committee has the right to amend the title without prejudice the subject of research.

4) The Faculty council has the right to suspend the student enrolment for a certain period if he has acceptable excuse preventing him from continuing his study or research, and his period will not counted.

5) Registration will be cancelled in one of the following cases:

- If the supervisor report during the registration period is unsatisfactory
- If student did not submit his thesis before the end of registration period.
- If the judging and discussion committee rejected the thesis twice.

6) The applicant should submit 10 copies of the thesis after its validity is approved by the judging and discussion committee to be distributed to the committee members and Faculty library and the judging and discussion committee may decide the exchange of the thesis with other universities or printing at the expense of the university.

	Program coordinators	Head of department
Name	Prof. Dr. Hamada D.H. Mahboub	Prof. Dr. Hamada D.H. Mahboub
Signature		

Matching program ILOs with ARS - Matrix

Program ILOs	ARS																							
	K&U (a)						I.S. (b)							P.P. (c)				G.T. (d)						
	١	٢	٣	٤	٥	٦	١	٢	٣	٤	٥	٦	٧	١	٢	٣	٤	١	٢	٣	٤	٥	٦	٧	٨
K&U	**1 2**	٣	٤	٥	٦	٧																				
I.S.							١	٢	٣	٤	٥	٦	٧													
P.P.														**1 2**	**3 4**	٤	٥									
G.T.																		١	٢	٣	٤	٥	٦	٧	٨

Program Specification Matrix

Master in Veterinary Medical Sciences (Animal Behavior and Management)

Name of student: ايناس عبد المنعم كامل **Registration date:** Nov. 201٠

Courses		Total Contact hours/ course	No. of hours / week			K.U (a)							I.S (b)							P.P (c)					G.T (d)							
Code	Name		Lect.	Lab.	Total	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	1	2	3	4	5	6	7	8
641	Fundamental (core) course	308	3	4	7	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x
-	Research methodology	176	1	3	4			x		x	x					x	x	x	x		x	x	x	x	x		x	x	x		x	x
769	Farm animal hygiene (advanced)	176	2	2	4	x		x		x			x	x	x				x	x	x	x	x		x	x	x	x	x	x	x	x
790	Advanced animal breeding and improvement (advanced)	88	2	-	2	x	x	x		x		x		x					x	x	x	x	x		x	x	x		x	x	x	x
٧٩٣	Advanced sheep and goat production (advanced)	176	2	2	4	x		x		x				x					x	x	x	x	x		x	x	x	x	x		x	x
796	Advanced biostatics	88	2	-			x				x		x		x						x	x										
Total		1012	12	11	23																											
Thesis							x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Program Specification Matrix

Master in Veterinary Medical Sciences (Animal Behavior and Management)

Name of student: محمد عبد الله سلام **Registration date:** Nov. 201٠

Courses		Total Contact hours/ course	No. of hours / week			K.U (a)							I.S (b)							P.P (c)					G.T (d)							
Code	Name		Lect.	Lab.	Total	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	1	2	3	4	5	6	7	8
641	Fundamental (core) course	308	3	4	7	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x
-	Research methodology	176	1	3	4			x		x	x					x	x	x	x		x	x	x	x	x		x	x	x		x	x
657	Clinical nutrition	176	2	2	4	x		x		x			x	x	x				x	x	x	x	x		x	x		x	x	x		x
750	Artificial insemination in birds and rabbit	132	1	2	3	x				x			x		x	x			x	x	x	x	x		x	x	x		x	x	x	
795	Rabbit production (advanced)	176	2	2	4	x		x		x				x					x	x	x	x	x		x	x	x	x	x		x	x
Total		968	9	13	22																											
Thesis							x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Program Specification Matrix

Master in Veterinary Medical Sciences (Animal Behavior and Management)

Name of student: ولاء سعد حسانين **Registration date:** ---. 2012

Courses		Total Contact hours/ course	No. of hours / week			K.U (a)							I.S (b)							P.P (c)					G.T (d)							
Code	Name		Lect.	Lab.	Total	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	1	2	3	4	5	6	7	8
641	Fundamental (core) course	308	3	4	7	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x
-	Research methodology	176	1	3	4			x		x	x					x	x	x	x		x	x	x	x	x		x	x	x		x	x
639	Microbial biochemistry and biotechnology	١٧٦	2	2	4	x		x					x	x	x				x	x	x	x	x		x	x		x	x	x	x	x
654	Laboratory animal nutrition	132	1	2	3	x		x		x			x	x					x	x	x	x	x		x	x	x		x	x		x
784	Genetic of microorganisms	132	1	2	3	x		x		x			x		x			x	x	x	x	x	x		x	x		x	x		x	x
790	Advanced animal breeding and improvement	88	2	-	2	x	x	x		x		x		x					x	x	x	x	x		x	x	x		x	x	x	x
Total		1012	10	13	23																											
Thesis							x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x