PROGRAMME SPECIFICATIONS
Of Diploma
2017-2018

Programme Specification
University: Beni-suef University
Faculty: Veterinary Medicine
A- Administrative Information
1. Programme title:
 Diploma of Veterinary Medical Science (Vet. Pharmacology).
2. Award/degree: Diploma programme
3. Department responsible: Department of Pharmacology
4. Coordinator: Dr. Abeer Mohamed Radi
5. External evaluator(s):
6. Date of most recent approval of programme specification by the Faculty
Council:
B- Professional Information
1. Programme aims: The Diploma programme support the postgraduate student
ability to:

1. Prepare qualified graduates for the requirements of the veterinary
    pharmacology.
2. Identify all branches of pharmacology, pharmacology of systems,
    pharmacodynamic and pharmacokinetics of different drugs, chemotherapy,
    endocrine pharmacology, fish pharmacology, clinical pharmacology,
    physiology and toxicology.
3. Make a decision based on available information.
4. Identify and solve veterinary and related problems of the surrounding
    community.

2. Intended learning outcomes (ILOs) for program
a- Knowledge and understanding:
By the end of the program, the postgraduate must be able to:
a1-Emphasize the specialized principles, theories and hypotheses in the veterinary
pharmacology, physiology and toxicology.

a2-Identify the pharmacokinetics and pharmacodynamics of drugs.

a3-Realize the drugs affecting ANS, CNS, Reproductive system (Autacoids and
reproductive Hormones), Urinary system, Respiratory system, Digestive system,
Cardiovascular system, Skin and eye, metabolism and fish pharmacology.

a4-Understanding specified knowledge about physiology and toxicology that

related to pharmacology.

a-5- Recognize veterinary professional practice regulation and ethics and aware about community development and protection of environment.

b- Intellectual skills

By the end of the Diploma program, the postgraduate must be able to:

b1-Make a decision based on available information.

b2-prepare the student to deal pharmacologically with certain cases suffering from veterinary diseases and evaluate the veterinary risks.

b3- Identify and analyze veterinary pharmacological problems.

b4- Solve veterinary pharmacological problems of the surrounding community.

c- Professional and practical skills

By the end of the Diploma program, the postgraduate must be able to:

c1-Inject live laboratory animals with different drugs.

c2-Make the drug forms necessary for treatment certain diseases.

c3-Write efficiently prescriptions for treating diseases and veterinary professional reports.

c4. Treat the different expected cases in animals.

c5. Perform different methods of drug detection.

d- General and transferable skills

By the end of the Diploma program, the postgraduate must be able to:

dl- Practice self-evaluation and need assessment.

d2- Utilize different available resources for efficient obtaining of knowledge and

information.

d3-Apply self-learning of programs of computer related to pharmacology such as (R-strip, Micromath, Scientific software -USA).

d4- Lead a team work in a certain professional task.

d5-comunicate with drug companies, pharmacists and the friends in the career.

d6-Mange time and work in research group.

3- Academic standards

* The faculty mission, vision and strategic objective are confirmed to the academic standard. The learning outcomes are inline with the department and the faculty mission.

* Postgraduates NARS (February 2009) Diploma degree chapter issued by national authority for quality assurance and accreditation of education (NAQAAE) and Veterinary medicine post graduate academic standards (ARS) for the faculty of veterinary medicine, Beni-Suef University, Beni-Suef, Egypt are selected to confirm the appropriateness of the academic standards .

4 – Curriculum structure and content.

4.1) Programme duration: 1years

4.2) Programme structure:

Cources	Lecture	Practical	Total
1. Veterinary pharmacology	2	2	4
2. Pharmaceutics	2	2	4
3. Pharmaceutical chemistry	1	1	2
4. Physiology	2	2	4
5. Veterinary toxicology	1	1	2

5- Programme – course ILOS Matrix
Diploma Program Specification Matrix (Program Courses with ILOS)

Program ILOs		courses
Knowledge and understanding	a1	**D14-A, D14-C, D14-D**
	a2	**D14-A, D14-B, D14-E**
	a3	**D14-A, D14-B, D14-E**
	a4	**D14-A, D14-C, D14-D**
	a5	**D14-A, D14-C, D14-D**
Intellectual skills	b1	**D14-A, D14-C, D14-D**
	b2	**D14-A, D14-B, D14-E**
	b3	**D14-A, D14-C, D14-D**
	b4	**D14-A, D14-C, D14-D**
	b5	**D14-A, D14-C, D14-D**
Professional and practical skills	c1	**D14-A, D14-B, D14-E**
	c2	**D14-A, D14-B, D14-E**
	c3	**D14-A, D14-B, D14-E**
	c4	**D14-A, D14-C, D14-D**
General and transferable skills	d1	**D14-A, D14-C, D14-D**
	d2	**D14-A, D14-C, D14-D**
	d3	**D14-A, D14-B, D14-E**
	d4	**D14-A, D14-C, D14-D**
	d5	**D14-A, D14-C, D14-D**
	D6	**D14-A, D14-C, D14-D**

6- **Programme admission requirement:**
1- Obtaining a bachelor degree in veterinary medicine sciences from one of the Egyptian universities or equivalent degree from another recognized scientific institute with any grade

2- The bachelor degree must be obtained at least one year prior to registration

3- The applicant must have regular attendance in his courses according to the schedule of the faculty.

4- Registration will be during September of each year.

7 - Regulations for progression and programme completion.

1- Registration period is one year for diploma and the applicant not exceed a period of registration for two year.

2- The examinations of the diploma are 2 times / year in December & April.

3- The faculty council has the right to deprive the applicant from the exam if his attendance courses are less than 75%.

4- In case of failure, the exams will be hold 2 times / year and reexamination in all courses each time.

8-System of examination for postgraduate studies as follow:

☐ Time of written exams, 3 hours for each curriculum have 3 hours or more for theoretical / practical hours/ week. If the curriculum less than 3 hours / week, the time of ex. is 2 hours only.

☐ The final degree of each curriculum which have 3 hours (theoretical & practical) per week is 100 & less than 3 hours 50 degree & divided into 50 % for written ex. and 50 % for practical and oral ex.

9-Grades of graduation are as follow:

Excellent	**> 90**
Very good	**> 80**
Good	**>70**
Pass	**>60**
Failed	**45 to less than 60 weak**
	Less than 45 very weak

The programme specification should have attached to it all course specifications listed in the matrix.

Programme coordinator:
Name: Dr.Abeer Mohamed Radi
Signature... Date

Head of the Department:
Name: Prof. Dr. Mohamed Abd Allah Tohamy
Signature... Date,

Diploma program ILOs with ARS

√ Academic standers / Program ILOs		Knowledge and understanding				Intellectual skills					Professional and practical skills		General and transferable skills						
		a1	a2	a3	a4	b1	b2	b3	b4	b5	c1	c2	d1	d2	d3	d4	d5	D6	D7
Knowledge and understanding	a1	√																	
	a2			√															
	a3			√															
	a4			√															
	a5		√		√														
Intellectual skills	b1									√									
	b2						√		√										
	b3					√													
	b4						√												
	b5							√											
Professional and practical skills	c1										√								
	c2										√								
	c3										√								
	c4											√							
General and transferable skills	d1														√				
	d2															√			
	d3													√					√
	d4																√		
	d5												√						
	d6															√			

Program aims – ILOS Matrix for the Diploma program

مصفوفة اهداف البرنامج مع مخرجات التعلم المستهدفة

Program ILOs		Program aims				
		Prepare qualified graduates for the requirements of the veterinary pharmacology.	Identify quality principles and basics of veterinary pharmacology	Identify all branches of pharmacology, pharmacology of systems, pharmacodynamic and pharmacokinetics of different drugs, chemotherapy, endocrine pharmacology, fish pharmacology, clinical pharmacology, physiology and toxicology.	Make a decision based on available information.	Identify and solve veterinary and related problems of the surrounding community.
Knowledge and understanding	a1- Acquire specialized principles, theories and hypotheses in the veterinary pharmacology, physiology and toxicology.	√	√			
	a2- Be aware about the pharmacokinetics and pharmacodynamics of drugs.			√		
	a3- acquire specialized knowledge about drugs affecting ANS, CNS, Reproductive system (Autacoids and reproductive Hormones), Urinary system, Respiratory system, Digestive system, Cardiovascular system, Skin and eye, metabolism and fish pharmacology			√		
	a4-Acquire specified knowledge about physiology and toxicology that related to pharmacology.			√		
	a-5- Recognize veterinary professinonal practice regulation and ethics and aware about community development and protection of environment.				√	√

ILOs	Program	Program aims				
		Prepare qualified graduates for the requirements of the veterinary pharmacology.	Identify quality principles and basics of veterinary pharmacology	Identify all branches of pharmacology, pharmacology of systems, pharmacodynamic and pharmacokinetics of different drugs, chemotherapy, endocrine pharmacology, fish pharmacology, clinical pharmacology, physiology and toxicology.	Make a decision based on available information.	Identify and solve veterinary and related problems of the surrounding community.
	b1-Make a decision based on available information.				√	
	b2-prepare the student to deal pharmacologically with certain cases suffering from veterinary diseases and evaluate the veterinary risks.				√	√
	b3- Identify and analyze veterinary pharmacological problems.					√
	. b4- Solve veterinary pharmacological problems of the surrounding community.					√
	b-5-comprehend the veterinary papers.	√				
Practical and professional skills	c1-Prepare the postgraduate for injection of living laboratory animals with different drugs	√				
	c2-Prepare the postgraduate to make the drug forms necessary for treatment certain diseases.	√	√			
	c3-Write efficiently prescriptions for treating diseases.	√	√			
	. c4- Write efficiently the veterinary professional reports	√	√			

Program ILOs		Program aims				
		Prepare qualified graduates for the requirements of the veterinary pharmacology.	Identify quality principles and basics of veterinary pharmacology	Identify all branches of pharmacology, pharmacology of systems, pharmacodynamic and pharmacokinetics of different drugs, chemotherapy, endocrine pharmacology, fish pharmacology, clinical pharmacology, physiology and toxicology.	Make a decision based on available information.	Identify and solve veterinary and related problems of the surrounding community.
General and transferable skills	dl- Practice self-evaluation and need assessment.				√	
	d2- Utilize different available resources for efficient obtaining of knowledge and information.	√				
	d3-Apply self-learning of programs of computer related to pharmacology such as (R-strip, Micromath, Scientific software - USA).	√	√			
	d4- Lead a team work in a certain professional task	√				
	d5-comunicate with drug companies, pharmacists and the friends in the career	√				
	d6-Mange time and work in research group	√				

Beni-Suef University
Faculty of Veterinary Medicine
Course Specification of Postgraduate

1-Basic information

Course Code:	D14-A
Course title :	Veterinary Pharmacology
Program title:	Diploma of Veterinary Pharmacology
Contact hours/ week	4 hours/ week, (Lect. 2hr/ week, Practical 2hr/week)
Approval Date	

2-Professional information

Overall aims of course:

By the end of this course the student is able to:

a1-. Identify quality principles and basics in veterinary pharmacology.

a2- Develop the information technology skills of veterinary pharmacology

a3-.Acquire specific Knowledge about Chemotherapy and Clinical pharmacology

a4- Acquire specific Knowledge about Drug toxicology and Fish pharmacology

a5- -Choose the suitable drugs for treating different diseases.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

By the end of this course the student should be able to:

a1- Identify principles, theories and hypotheses in the veterinary pharmacology.

a2- Distinguish the pharmacokinetics and pharmacodynamics of drugs.

a3-Recognize drugs affecting ANS, CNS, Reproductive system (Autacoids and reproductive Hormones), Urinary system, Respiratory system, Digestive system, Cardiovascular system, Skin and eye and Metabolism, Clinical pharmacology and Fish pharmacology.

a4- Set therapeutic uses, side effects and toxicity of different drugs.

b-Intellectual skills

By the end of this course the student should be able to:

b1- Choose the appropriate methods for determination of the drug actions, mechanism of action, kinetics, side effects and toxicity.

b2- Differentiate between the effects of different drugs act on body systems.

 b3- Suggest drugs for treatment certain cases suffering from veterinary diseases.

b4- Creates a good planning technique for performing and analysis of drug bioassays.

C- Professional and practical skills

By the end of this course the student should be able to:

c1- Practice the postgraduate for injection of living laboratory animals with different drugs.

c2- Produce the drug forms necessary for treatment certain diseases.

c3- Design efficiently prescriptions for treating diseases.

c4- Analyze factors that leads to failure of drug treatments.

c5- Assess pharmacological effects of drugs on laboratory animals as well as isolated tissue preparations.

d- General and transferable skills

Course Specification of Postgraduate

By the end of studying the course, the student should be able to:

d1- Communication with their professors and staff members

d2- Utilize different available resources for efficient obtaining of knowledge and information.

d3- Own continuous and self-learning of programs of computer related to pharmacology such as (R-strip, Micromath, Scientific software, USA).

d4- Lead a team work in a certain professional task.

d5- Own continuous connection with drug companies, pharmacists and the friends in the career.

4-Topics and contents

Course		Topic	Week	No. of hours	Lectures	Practical
Veterinary pharmacology (Lec. h./week, Pract h./week)		*General pharmacology	1,2,3	18	6	12
		*Autonomic N.S.	4,5,6	10	6	4
		*Central N.S.	7,8,9,10	18	8	10
		*Reproductive S.	11	2	2	-
		*Skin and Eye	12	8	2	6
		*Urinary S.	13	2	2	-
		*Cardiovascular S.	14	2	2	-
		*Respiratory S.	15	6	2	4
		*Digestive S.	16	6	2	4
		*Drugs affecting metabolism	17	4	2	2
		*Antibiotics	18,19,20	16	6	10
		*Sulfonamides	21	4	2	2
		*Other antimicrobials	22	4	2	2
		*Anthelmintics	23,24	5	4	1
		*Antifungal	25	3	1	2
		*Antiprotozoals	26,27	5	4	1
		*Hormones	28	2	2	-
		*Disinfectants and antiseptics	29	14	2	12
		*Antivirals	30	1	1	-
		*Antitubercular	30	1	1	-
		*Antitumor	31	1	1	-
		* Clinical pharmacology	31,32	4	4	-
		*Drug toxicology	33,34	4	4	-
		*Fish pharmacology	35,36	4	4	-
		Total	36	**144**	**72**	**72**

Course Specification of Postgraduate

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and faculty library)

5.3- Practical (models, samples of……..).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	**I.S**	**P&P.S**	**G.S**
Written Exam	a1:a4	b1:b4		
Practical Exam	a1:a4	b1:b4	c1:c5	d4
Oral Exam	a1:a4	b1:b4		d1:d5

7.2. Assessment schedules

Method	Week(s)
Written Exam	During the last month
Practical Exam	During the last month
Oral Exam	During the last month

7.3. Weight of assessments

Assessment	Weight of assessment
Practical Exam	25 %
Written exams	50 %
Oral Exam	25 %
Total	100 %

8- List of references

8.1. Notes and books
Departmental notes on:

 * Notes of pharmacology (part I and part ll) by staff member.

 * Note of practical pharmacology

* Basis of pharmacology by Prof. Dr. Mohamed Abd Allah Tohamy (2015/25136).

8.2. Essential books:
- *(Present in library of Faculty of Veterinary Medicine, Beni-Suef University)*
*Walker, D.G.; Renwick, A.G. and Hillier, K. (2001):
Medical pharmacology and therapeutics.
First Ed. University of Southampton printed in Spain

Course Specification of Postgraduate

8.3. Recommended texts:

-- (Present in library of Faculty of Veterinary Medicine, Beni-Suef University)

*Nicholas H. Booth and E. Mcdonald (2005):

5th Edition, Jones Veterinary Pharmacology and Therapeutics (2005)

*Goodman, L.S. and Gilman, A. (2006):

   The pharmacological basis of therapeutics 8th Ed. Iowa State University Press USA

*Robert L. Bill (2006):

3rd Edition, Clinical Pharmacology and Therapeutics for the Veterinary Technician

*Satish K. Garg (2006): 1st Edition-Reprint, Veterinary Toxicology

Norman Holland and Michael Patrick Adams (2007):

2nd Edition, Core Concepts In Pharmacology

8.4. Journals, Websites ……..etc

Journals:

*Journal of Veterinary Pharmacology and Therapeutics

*The Science and Practice of Pharmacy

*The Pharmacological Basis of Therapeutics

*Journal of Antimicrobial Chemotherapy

*Journal of Antibiotics

*British Journal of Pharmacology

*International Journal of Antimicrobial Agents

Websites:

httpi//www.sciencedirect.com/scince?...

ncbi.nlm.nih.gov/entrez/query.fcgi?...

   Course Coordinators   **Head of Department**

Dr. Abeer Mohamed Radi   Prof. Dr. Mohamed Abd Allah Tohamy

Beni Suef University
Faculty of Veterinary Medicine

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	*General pharmacology	1,2,3	1,2	1	1	1,2,4
2	*Autonomic N.S.	4,5,6	3	1	5	1,2,4
3	*Central N.S.	7,8,9,10	3	1	5	1,2,4
4	*Reproductive S.	11	3,4	1	5	1,2,4
5	*Skin and Eye	12	3,4	2,3	3,4	1,2,4
6	*Urinary S.	13	3,4	2,3	3,4	1,2,4
7	*Cardiovascular S.	14	3,4	2,3	3,4	1,2,4
8	*Respiratory S.	15	3,4	2,3	3,4	1,2,4
9	*Digestive S.	16	3,4	2,3	3,4	1,2,4
10	*Drugs affecting metabolism	17	3,4	2,3	3,4	1,2,4
11	*Antibiotics	18,19,20	3,4	12,3,,4	1,2,3	1,2,3,4,5
12	*Sulfonamides	21	3,4	12,3,,4	1,2,3	1,2,3,4,5
13	*Other antimicrobials	22	3,4	12,3,,4	1,2,3	1,2,3,4,5
14	*Anthelmintics	23,24	3,4	12,3,,4	1,2,3	1,2,3,4,5
15	*Antifungal	25	3,4	12,3,,4	1,2,3	1,2,3,4,5
16	*Antiprotozoals	26,27	3,4	12,3,,4	1,2,3	1,2,3,4,5
17	*Hormones	28	3,4	3,4	3,4	1,2,4,5
18	*Disinfectants and antiseptics	29	3,4	3,4	3,4	1,2,4,5
19	*Antivirals	30	2,4	2,3,4	2,3,4	1,3,5
20	*Antitubercular	30	2,4	2,3,4	2,3,4	1,3,5
21	*Antitumor	31	2,4	2,3,4	2,3,4	1,3,5

Course specification

22	* Clinical pharmacology	31,32	2,4	2,3,4	2,3,4	1,2,4
23	*Drug toxicology	33,34	2,4	2,3,4	2,3,4	1,2,4
24	*Fish pharmacology	35,36	2,4	2,3,4	2,3,4	1,2,4

Beni Suef University
Faculty of Veterinary Medicine

Beni-Suef University
Faculty of Veterinary Medicine

Course Specification of Postgraduate

1-Basic information

Course Code:	D14-B
Course title :	Pharmaceutical chemistry
Program title:	Diploma of Veterinary Pharmacology
Contact hours/ week	2 hours/ week, (Lect.1hr/week, Practical.1hr/week)
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1. Prepare qualified graduates for the requirements of the Pharmaceutical chemistry.
2. Identify quality principles and basics in Pharmaceutical chemistry.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

By the end of this course the student should be able to:

a1- Acquire specialized principles, theories and hypotheses in the Pharmaceutical chemistry.

a2- Acquire specialized knowledge about the drugs.

a3- Acquire specialized knowledge about formulation development.

b-Intellectual skills

By the end of this course the student should be able to:

b1- Suggest efficiently prescriptions for treating diseases.

b2- Suggest drugs for treating certain cases suffering from different diseases.

C- Professional and practical skills

By the end of this course the student should be able to:

c1- Prepare the postgraduate for injection of living laboratory animals with different drugs.

c2- Make the drug forms necessary for treatment certain diseases.

d- General and transferable skills

By the end of studying the course, the student should be able to:

dl- Practice self-evaluation and need assessment.

d2- Utilize different available resources for efficient obtaining of knowledge and information.

d3- Own continuous and self-learning of programs of computer related to pharmacology such as (R-strip, Micromath, Scientific software, USA).

d4- Lead a team work in a certain professional task.

d5- Own continuous connection with drug companies, pharmacists and the friends in the career.

4-Topics and contents

Course Specification of Postgraduate

Course	Topic	week	No. of hours	Lectures	Practical
Pharmaceutical chemistry (Lec. h./week, Pract h./week)	Introduction	1	2	2	-
	Drugs and their action	2,3,4,5,6,7	12	4	8
	Drug development	8,9	4	4	-
	Lead compound	10,11	4	4	-
	Sources of drugs and lead compound	12	2	2	6
	Drug classifications	13	2	2	-
	Drug administration	14,15,16,17	8	2	6
	Drug pharmacokinetics	18,19,20,21,22	10	2	8
	Formulation development	23,24,25,26	8	2	
	Computer Aided Drug Design	27	2	2	-
	Target sites for drug action	28	2	2	-
	Pharmacological and toxicological testing	29,30,31,32,33	10	2	8
	Structure-activity relationships	34	2	2	-
	Chemical synthesis of some drugs	35	2	2	-
	Metabolic pattern of some drugs	36	2	2	-
	Total	36	72	36	36

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and faculty library)

5.3- Practical (models, samples of……..).

Course Specification of Postgraduate

| **7-Student assessment** |

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	**I.S**	**P&P.S**	**G.S**
written Exam	a1-a3	b1-b2		
Practical Exam	a1-a3		c1-c2	
Oral Exam	a1,a3	b1-b2		d1-d5

7.2. Assessment schedules

Method	**Week(s)**
Practical exams	During the last month
written exams	During the last month
Oral Exam	During the last month

7.3. Weight of assessments

Assessment	Weight of assessment
Practical exams	25%
written exams	50 %
Oral Exam	25 %
total	100 %

| **8- List of references** |

8.1. Notes and books

Departmental notes on:

Pharmaceutical chemistry by Prof. Dr. Mohamed Abd Allah Tohamy (2015/25132)

8.2. Essential books:

- *(Present in library of Faculty of Veterinary Medicine, Beni-Suef University)*
*Walker, D.G.; Renwick, A.G. and Hillier, K. (2001):

Medical pharmacology and therapeutics.

First Ed. University of Southampton printed in Spain

8.3. Recommended texts:

-- *(Present in library of Faculty of Veterinary Medicine, Beni-Suef University)*
*Wellborn, T.L. (1985):
   Control and therapy. In principal diseases of farm raised catfish.
   Auburn University, Alabama, Southeastern Cooperative Series
   Bulletin No. 225 pp. 50-70.

*Prescott. J.F. and Baggot, J.D. (1993):
   Antimicrobial therapy in Veterinary Medicine 2nd ed.
   Ames, Iowa State University Press USA
*Stoffergen, D.A.; Bowser, P.R. and Babish, J.G. (1996):
   Antimicrobial chemotherapeutics for fish aquaculture:

Course Specification of Postgraduate

A synopsis of laboratory and field efficacy and safety studies
J. Aqua. An. Health, 8: 181-207.

*Stockly, I.H. (1999):
Drug interactions 5th Ed.
University of Nottingham Medical School, Nottingham, UK

*Mycek, M.J.; Harvey, R.J. and Chanpe, P.C. (2000):
Pharmacology 2nd edition, library of congress cataloging in publication data

*Prescott. J.F.; Baggot, J.D. and Walker, R.D. (2000):
Antimicrobial therapy in Veterinary Medicine 2nd ed.
Ames, Iowa State University Press USA

*Nicholas H. Booth and E. Mcdonald (2005):
5th Edition, Jones Veterinary Pharmacology and Therapeutics (2005)

*Goodman, L.S. and Gilman, A. (2006):
The pharmacological basis of therapeutics 8th Ed. Iowa State University Press USA

*Robert L. Bill (2006):
3rd Edition, Clinical Pharmacology and Therapeutics for the Veterinary Technician

*Satish K. Garg (2006): 1st Edition-Reprint, Veterinary Toxicology

Norman Holland and Michael Patrick Adams (2007):
2nd Edition, Core Concepts In Pharmacology

8.4. Journals, Websites ……..etc

Journals:
*Journal of Pharmaceutical Science
*Journal of Veterinary Pharmacology and Therapeutics
*Veterinary Research Communication
*Journal of Chromatography
*The Science and Practice of Pharmacy
*The Pharmacological Basis of Therapeutics
*British Journal of Pharmacology

Websites:
httpi//www.sciencedirect.com/scince?...

ncbi.nlm.nih.gov/entrez/query.fcgi?...

Course Coordinators	**Head of Department**
Dr. Abeer Mohamed Radi	Prof. Dr. Mohamed Abd Allah Tohamy

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Introduction	1	1	1	1,2	1
2	Drugs and their action	2,3,4,5,6,7	2	1,2	2	2
3	Drug development	8,9	2,3	1,2	2	2,5
4	Lead compound	10,11	3	1	2	1,2
5	Sources of drugs and lead compound	12	3	1	2	3,4
6	Drug classifications	13	2	1	2	1
7	Drug administration	14,15,16,17	2	1	1,2	2,5
8	Drug pharmacokinetics	18,19,20,21,22	2,3	1,2	2	3
9	Formulation development	23,24,25,26	3	1,2	1,2	2,5
10	Computer Aided Drug Design	27	3	1,2	2	1
11	Target sites for drug action	28	2	1,2	1,2	1,5
12	Pharmacological and toxicological testing	29,30,31,32,33	2,3	1,2	1,2	1,5

Course specification

13	Structure-activity relationships	34	2	1,2	2	2,4
14	Chemical synthesis of some drugs	35	3	1,2	2	1,5
15	Metabolic pattern of some drugs	36	3	1,2	2	1,5

Beni Suef University
Faculty of Veterinary Medicine

Course specification

1-Basic information

Course Code:	D14-C
Course title :	Physiology
Program title:	Diploma of Veterinary Pharmacology
Contact hours/ week	4hours/ week, (Lect. 2hrs/week, Practical. 2hrs/week)
Approval Date	

2-Professional information

Overall aims of course

a-To ensure that students reserve a scientific base in veterinary physiology**.**

b-To provide students with the ability to advance biotechnology techniques in animal production.

3- Intended learning outcomes of course (ILOs)
a-Knowledge and understanding

By the end of this course the student should be able to

a1-Summarize the anatomical, physiological and hormonal aspects of central and autonomic nervous system..

a2-Discuss the physiology cell membrane transmission.

a3-Describe the process of biological barriers.

a4-Explain the relationship between different hormones & development and specify the various stages of development & its regulation.

a5-Understand the pass way neurochemical transmission.

a6-Understand the hormonal action and control.

b-Intellectual skills

By the end of this course the student should be able to :

b1-know the drugs that can transport the biological barriers.

b2-Compare the actions of different hormones.

c-Professional and practical skills

By the end of this course the student should be able to:
   cl-interpret the result of different serological tests.
   c2-undertake the laboratory techniques for measuring hormone levels in the blood.

d-General and transferable skills

By the end of studying the course, the student should be able to:-

   dl- Summarize research findings in oral form in seminars and workshops.
   d2- Communicate effectively with supervisors.
   d3-Demonstrate information retrieval and library skills.
   d4- Be kind with animals during experimentation.
   d5-Encourage students for cooperation with colleagues.
   d6-Improve computer and internet search practice**.**

4-Topics and contents

Topics	No. of hours	Lectures	Practical
Structure and function of central and autonomic nervous system.	48	24	24
Hormonal action	40	20	20
The physiology cell membrane transmission	40	20	20
The mechanism of biological barriers	40	20	20
Neurochemical transmission	40	20	20
Total	**208**	**104**	**104**

5-Teaching and learning methods

4.1 Lectures (brain storm, discussion) using board, data shows.
4.2 self-learning by essays and presentations (computer researches and faculty library).

4.3 Practical (models, samples of……………).

6-Student assessment

6.1.Assessments methods

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U (a)	I.S (b)	P&P.S (c)	G.S (d)
Final exam	al -a6			
Practical exam			c1-c2	d1
Oral exam		b1 –b2		d1-d4

6.2-Assessment schedules/semester

Assessments methods	Time of Assessments
Practical exam	**December or April**
Final exam	**December or April**
Oral exam	**December or April**

6.3-Weight of assessments

Assessment	Weight of assessment
Practical exam	50
Final exam	30
Oral exam	20
Total	**100%**

7- List of references

7.1. Notes and books.

Course notes: Student handbook of physiology part II prepared by the department staff members.

7.2 Essential books

*Animal physiology. ITTA Sambasiviah, A.P. Kamalakara RAO and S. Augustine Chellappa 1987.
* Physiology of Domestic Animals. William O. Reece 1991.

* Principles of Anatomy and Physiology. 4th edition. Gerard J. Tortora – Nicholas P. Anagnostakos 1975.

7.3- Recommended books

* * * Experiments in Physiology 6th Edition. Gerard P. Tharp 1993.
* Textbook of Medical Physiology. Guyton & Hall 9th Edition. 1996. W.B. Saunders Co. (Harcourt Brace I.E.) Philadelphia, USA.
* Physiology 3rd edition. John Buuock, Joseph Boyle III and Michael B. Wang, 1995. National Medical Series for Independent Studies. Middle East Edition. Mass Publishing CO. 9Al Tahrir St., Dokki, Giza, Egypt.

7.4. Journals , Websites ……..etc

Journals:

.
* Egyptian J. of Basic and Applied Physiology. Cairo, Egypt.

Websites:

http://www.science direct.com
Pub med.
Alta vista
http://www:whiteman .edu/Departments/Biology/clases/ B111/B111 outlinesCirGas.htm.

Course coordinator

Dr / Nermeen Atef

.
Date:

Head of department:

Prof. Dr / Ahmed Hashem El-Anwar
Date:

Matrix alignment of course topics and `ILOs

Topic	No. of hours	Knowledge and understanding						Intellectual skills					Practical and professional skills						General and transferable skills					
		1	2	3	4	5	6	1	2	3	4	5	1	2	3	4	5	6	1	2	3	4	5	6
Structure and function of central and autonomic nervous system	48	x							x															
Hormonal action	40				x				x				x	x					x	x	x			
The physiology cell membrane transmission	40		x																x		x	x		
The mechanism of biological barriers	40			x				x														x	x	
Neurochemical transmission	40					x																	x	
Total	**208**																							

Course Specification of Postgraduate

1-Basic information

Course Code:	D14-D
Course title :	Veterinary toxicology
Program title:	Diploma of Veterinary Pharmacology
Contact hours/ week	2 hours/ week, (Lect.1hr/week, Practical. 1hr/week)
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

The aim of the course is to identify the potential harmful effects of drugs and chemicals to humans, animals and the environment, and to provide their prevention and treatment. As well as Appropriate risk assessment experimentation and expert judgment to minimize the probability of the occurrence of adverse effects.

- Identify and to characterize adverse effects of drugs and chemical compounds.

- Elucidate mechanisms of action at the cellular, biochemical and molecular level,

- Review and to assess safety data generated for a specific drugs and chemicals.

- Estimate the probability of the occurrence of adverse effects (risk assessment),

- Contribute responsibly to risk-benefit evaluation, risk management and risk communication.

- Develop approaches for prevention, diagnosis and treatment of adverse effects.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

By the end of this course the student should be able to:

a1. Understand the different toxicological concepts

a2. Be aware of the different classification of poison and dose relationship.

a3. Recognize the different toxicity testing and the animal models requirements.

a4. Realize the toxicological biotransformation and different mechanistic pathways.

a5. Be able to collect suspected samples and detect the expected toxicants.

a6. Emphasize the toxicokinetic and toxicodynamic of poison.

a7. Recognize the different methods for diagnosis and treatment of poisoning

a8. Be aware with the toxic effects in different organs and the corresponding organ

Course Specification of Postgraduate

toxicity testing.

b-Intellectual skills

By the end of this course the student should be able to:

b1. Weigh up the expected acute and chronic hazards.

b2. Appraise the molecular basis and mechanistic pathways of toxic actions.

b3. Assess the toxicological impacts for different organ toxicity.

b4. Estimate the socio-economic for ideal poisoning treatment.

C- Professional and practical skills

By the end of this course the student should be able to:

c1. Follow the NIH and WHO guidelines of safety.

c2. Carry out sampling, labeling, transport and preservation of suspected samples.

c3. Perform different methods of poison detection.

c4. Monitor the main organ target for toxicants.

c5. Treat the different expected poisoning cases in animals.

d- General and transferable skills

By the end of studying the course, the student should be able to:

d1. Work e ectively as part of a team, demonstrating decision

making and time management.

d2. E ciently make use of library facilities and IT tools.

d3. Explore appropriate computer / keyboard skills including word

processing, spreadsheets, presentation packages and graph plotting,

d4. Undertake written assignments and oral presentations.

4-Topics and contents

Time/ Week	Topics	No. of hours	Credit Hours/week	
			T	P
1	Toxicological concepts and terminology	2	1	-------
	Dose-response relationship		-------	1
2	Classification of poisons and toxic effects	2	1	-------

Course Specification of Postgraduate

	Proper sampling for toxicological assessment		-------	1
3	Common causes of animal poisoning	2	1	-------
	Samples handling and shipping		-------	1
4	Transport of poisons across membranes	2	1	-------
	Optimum methods for samples storage		-------	1
5	Absorption of poisons	2	1	-------
	Instrumentation used for toxicological assessment		-------	1
6	Distribution and excretion of poisons	2	1	-------
	Analytical methods for toxicological assessment		-------	1
7	Biotransformation: Phase I	2	1	-------
	Statistical methods for analytical results		-------	1
8	Biotransformation: Phase II	2	1	-------
	Interpretation of analytical results		-------	1
9	Bioactivation: Free radicals and electrophiles formation	2	1	-------
	Detection of active ingredient in toxic plants (1)		-------	1
10	Mechanistic toxicology (a): Lipid peroxidation and antioxidants	2	1	-------
	Detection of active ingredient in toxic plants (2)		-------	1
11	Mechanistic toxicology (b): covalent and non-covalent bindings	2	1	-------
	Detection of antioxidants		-------	1
12	Mechanistic toxicology (c): Reaction with enzymes	2	1	-------
	Detection of Lipid peroxidation		-------	1
13	Mechanistic toxicology (d):		1	-------

Course Specification of Postgraduate

	Interaction with receptor	2		
	Dose/Vehicle selection and dose formulation		-------	1
14	Factors affecting toxicological action	2	1	-------
	Laboratory animal models for detection of poison(1)		-------	1
15	Diagnosis of toxicities	2	1	-------
	Laboratory animal models for detection of poison(2)		-------	1
16	Treatment of poisoning (a): Supportive measures	2	1	-------
	Toxicity testing (a)		-------	1
17	Treatment of poisoning (b): Common antidotes in veterinary practice	2	1	-------
	Toxicity testing (b)		-------	1
18	Hepatotoxicity	2	1	-------
	Hepatotoxicity testing assessment		-------	1
19	Nephrotoxicity	2	1	-------
	Nephrotoxicity testing assessment		-------	1
20	Neuronopathy and axonopathy	2	1	-------
	Dermal sensitization and irritation studies		-------	1
21	Toxic effects on synapsis and channels	2	1	-------
	Toxicological effects on blood		-------	1
22	Immunotoxicity	2	1	-------
	immunotoxicity testing assessment		-------	1
23	Cardiovascular toxicity	2	1	-------
	Cardiovascular testing assessment		-------	1
24	Male reproductive toxicity	2	1	-------
	Male fertility testing		-------	1
25	Female reproductive toxicity	2	1	-------
	Teratology testing		-------	1

Course Specification of Postgraduate

26	Mutagenesis		1	-------
	Assessment of Cell Toxicity (b): Determination of chromosomal abberation	2	-------	1
27	Carcinogenesis		1	-------
	Assessment of Cell Toxicity (c): Detection of covalent binding	2	-------	1
28	Pollution sources and classification		1	-------
	Case study of the toxic effects of pollution acute effects	2	-------	1
29	Pollution hazard effects		1	-------
	Case study of the toxic effects of pollution chronic effects	2	-------	1
30	Advanced methods for minimization of pollution		1	-------
	Field study to areas has significant pollution	2	-------	1
31	Metals intoxication (1)		1	-------
	Detection of irritant poisons (1)	2	-------	1
32	Metals intoxication (2)		1	-------
	Detection of irritant poisons (2)	2	-------	1
33	Pesticides intoxication (1)	2	1	-------
	Detection of pesticides using GC		-------	1
34	Pesticides intoxication (2)		1	-------
	Detection of pesticides using HPLC	2	-------	1
35	Mycotoxins		1	-------
	Qualitative and quantitative methods for detection of Mycotoxins	2	-------	1
36	Corrosives and alkalis poisoning		1	-------
	Experimental effects of corrosives	2	-------	1

Course Specification of Postgraduate

5-Teaching and learning methods

5.1- Lecture using PowerPoint presentations.

5.2- Learning through tutorials.

5.3- Independent reading throughout basic Text books and research papers.

6-Student assessment

6.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	**I.S**	**P&P.S**	**G.S**
Final Exam	a1-a8	b1-b4	c1- c5	d2-d4
Practical Exam	a1-a7	b1- b4	c1- c5	d1
Oral Exam	a1-a8	b1-b4	c1- c5	d3

7.2. Assessment schedules

Method	Week(s)
Practical exams	During the last month
Final exams	During the last month
Oral Exam	During the last month

7.3. Weight of assessments

Assessment	Weight of assessment
Practical exams	25%
Final exams	50 %
Oral Exam	25 %
total	100 %

8- List of references

8.1. Notes and books

Departmental notes on:

: Prepared by departments' staff

- Notebook: Advanced General Toxicology

8.2. Essential books:

- (Present in library of Faculty of Veterinary Medicine, Beni-Suef University)

*Walker, D.G.; Renwick, A.G. and Hillier, K. (2001):

- Casarett and Doull's Toxicology. The Basic Science of Poisons: Klaassen, C.D., McGraw-Hill, New York.7*th* ed., 2008.
- Introduction to toxicology. Timbrell, J., - 3rd ed., Taylor & Francis, USA< 2003.

8.3. Recommended texts:

-- (Present in library of Faculty of Veterinary Medicine, Beni-Suef University)

Course Specification of Postgraduate

*Wellborn, T.L. (1985):
- Principles and Methods of Toxicology: Hayes, A.W., 5th ed., CRC Press, New York, 2007.
- Handbook of Toxicology: Derelanko, M.J. and Hollinger, M.A., 2nd ed., CRC Press , Boca Raton, 2002.

- **Web Sites, … etc**
- ** Toxicol. Appl. Pharmacol.*
- *Toxicol. In vitro.*
- http://www.toxicology.org/
- http://www.ivis.org/advances/Beasley/

http://www.sciencedirect.com/

Course Coordinators
Dr. Nour El-Houda Yassein

Head of Department
Prof. Dr. Khaled Abdou

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Introduction	1	1	1	1,2	1
2	Drugs and their action	2,3,4,5,6,7	2	1,2	2	2
3	Drug development	8,9	2,3	1,2	2	2,5
4	Lead compound	10,11	3	1	2	1,2
5	Sources of drugs and lead compound	12	3	1	2	3,4
6	Drug classifications	13	2	1	2	1
7	Drug administration	14,15,16,17	2	1	1,2	2,5
8	Drug pharmacokinetics	18,19,20,21,22	2,3	1,2	2	3
9	Formulation development	23,24,25,26	3	1,2	1,2	2,5
10	Computer Aided Drug Design	27	3	1,2	2	1
11	Target sites for drug action	28	2	1,2	1,2	1,5
12	Pharmacological and toxicological testing	29,30,31,32,33	2,3	1,2	1,2	1,5

Course specification

13	Structure-activity relationships	34	2	1,2	2	2,4
14	Chemical synthesis of some drugs	35	3	1,2	2	1,5
15	Metabolic pattern of some drugs	36	3	1,2	2	1,5

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Course Specification of Postgraduate

1-Basic information

Course Code:	D14-E
Course title :	Pharmaceutics
Program title:	Diploma of Veterinary Pharmacology
Contact hours/ week	4 hours/ week, (Lect.2hrs/week, Practical.2hrs/week)
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1. Prepare qualified graduates for the requirements of the veterinary Pharmaceutics.
2. Identify quality principles and basics in veterinary Pharmaceutics.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

By the end of this course the student should be able to:

a1- Acquire specialized principles, theories and hypotheses in the Veterinary Pharmaceutics.

a2- Acquire specialized knowledge about the Pharmaceutical processes.

a3- Acquire specialized knowledge about Veterinary Pharmaceutics

b-Intellectual skills

By the end of this course the student should be able to:

b1- Suggest efficiently prescriptions for treating diseases.

b2- Suggest drugs for treating certain cases suffering from different diseases.

C- Professional and practical skills

By the end of this course the student should be able to:

c1- Prepare different types of drug forms used in veterinary field.

c2- Prepare different types of prescriptions.

d- General and transferable skills

By the end of studying the course, the student should be able to:

d1- Practice self-evaluation and need assessment.

d2- Utilize different available resources for efficient obtaining of knowledge and information.

d3- Own continuous and self-learning of programs of computer related to pharmacology such as (R-strip, Micromath, Scientific software, USA).

d4- Lead a team work in a certain professional task.

d5- Own continuous connection with drug companies, pharmacists and the friends in the career.

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Course Specification of Postgraduate

Course	Topic	week	No. of hours	Lectures	Practical
Pharmaceutics (Lec. h./week, Pract h./week)	Pharmaceutical processes.	1,2,3	10	10	8
	Drug forms and preparations (liquid, solid, semisolid, molded and sterile forms).	3,4,5,6,7,8,9,10,11,12,13	42	14	20
	Metrology.	14	4	4	6
	Different types of prescriptions.	15,16,17,18,19,20,21,22	32	16	10
	Incompatibility in prescription.	23,24,25,26,27	20	12	8
	Preparation of different types of drug forms used in veterinary field.	28,29,30,31,32,33,34,35, 36	36	16	20
Total			**144**	**72**	**72**

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and faculty library)

5.3- Practical (models, samples of……..).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	**I.S**	**P&P.S**	**G.S**
Written Exam	a1-a3	b1-b2		
Practical Exam	a1-a3		c1-c2	
Oral Exam	a1,a3	b1-b2		d1-d5

7.2. Assessment schedules

Method	Week(s)
Practical exams	During the last month
written exams	During the last month
Oral Exam	During the last month

Course Specification of Postgraduate

7.3. Weight of assessments

Assessment	Weight of assessment
Practical exams	25 %
Written exams	50 %
Oral Exam	25 %
total	100 %

8- List of references

8.1. Notes and books

Departmental notes on:

Pharmaceutics by Prof. Dr. Mohamed Abd Allah Tohamy (2015/25134)

8.2. Essential books:

- (Present in library of Faculty of Veterinary Medicine, Beni-Suef University)

*Walker, D.G.; Renwick, A.G. and Hillier, K. (2001):

Medical pharmacology and therapeutics.

First Ed. University of Southampton printed in Spain

8.3. Recommended texts:

- (Present in library of Faculty of Veterinary Medicine, Beni-Suef University)

*Stockly, I.H. (1999):

Drug interactions 5th Ed.

University of Nottingham Medical School, Nottingham, UK

*Mycek, M.J.; Harvey, R.J. and Chanpe, P.C. (2000):

Pharmacology 2nd edition, library of congress cataloging in publication data

*Prescott. J.F.; Baggot, J.D. and Walker, R.D. (2000):

Antimicrobial therapy in Veterinary Medicine 2nd ed.

Ames, Iowa State University Press USA

*Nicholas H. Booth and E. Mcdonald (2005):

5th Edition, Jones Veterinary Pharmacology and Therapeutics (2005)

*Goodman, L.S. and Gilman, A. (2006):

The pharmacological basis of therapeutics 8th Ed. Iowa State University Press USA

*Satish K. Garg (2006): 1st Edition-Reprint, Veterinary Toxicology

Norman Holland and Michael Patrick Adams (2007):

2nd Edition, Core Concepts In Pharmacology

8.4. Journals, Websites ……..etc

Journals:

*Journal of Pharmaceutical Science

*Journal of Veterinary Pharmacology and Therapeutics

*Antimicrobial Agents and Chemotherapy

*The Science and Practice of Pharmacy

*The Pharmacological Basis of Therapeutics

*Journal of Antimicrobial Chemotherapy

*Journal of Antibiotics

*British Journal of Pharmacology

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Course Specification of Postgraduate

*Egyptian Journal of Veterinary Medicine
*International Journal of Antimicrobial Agents
*Journal of Veterinary Medicine
*Medicinal Research Review
Websites:
httpi//www.sciencedirect.com/scince?...

ncbi.nlm.nih.gov/entrez/query.fcgi?...

Course Coordinators   **Head of Department**
Dr. Abeer Mohamed Radi   Prof. Dr. Mohamed Abd Allah Tohamy

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Pharmaceutical processes.	1,2,3	1,2,3	1	1	1,2
2	Drug forms and preparations (liquid, solid, semisolid, molded and sterile forms).	3,4,5,6,7,8,9,10,11,12,13	3	1,2	1	2,5
3	Metrology.	14	1	1	2	3
4	Different types of prescriptions.	15,16,17,18,19,20,21,22	2	1	2	1,2,3
5	Incompatibility in prescription.	23,24,25,26,27	1,2,3	1	1,2	4,5
6	Preparation of different types of drug forms used in veterinary field.	28,29,30,31,32,33,34,35,36	1,2,3	1,2	1,2	1,2,5

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