



## Course specification

### 1-Basic information

<b>Course Code:</b>	Nutrition (Special) (NUT:3238)
<b>Course title :</b>	Nutrition and Clinical Nutrition
<b>Academic year:</b>	3 <sup>rd</sup> year
<b>Program title:</b>	B. Sc. Veterinary Medical sciences
<b>Contact hours/ week</b>	5 hours/week, (3 Lect./week, 2 Practical/week)
<b>Approval Date</b>	6/9/2017

### 2-Professional information

**Overall aims of course:**

**This course aims to:**

- 1- Study the critical nutrient requirements, and ration formulation in practical feeding situations.
- 2- Determine the integration of important nutritional factors in livestock production and clinical nutrition importance.

### 3- Intended learning outcomes of course (ILOs)

**a-Knowledge and understanding:**

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

- a1. Recall the digestibility of feeds and its importance for evaluating feeds.
- a2. Outline the effects of suboptimal or deficient feeding on animal condition, health, and performance to achieve maximum performance on minimal nutrient intake.
- a3. Specify clinical aspects of the different body functions; maintenance, growth and reproduction.

**b-Intellectual skills**

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

- b1. Get proper decision in farms especially those related to increase production using least cost ration formulation.
- b2. Differentiate among the different animals and poultry nutritional requirements.
- b3. Interpret the results of feed analysis and correction needed.

**c-Professional and practical skills**

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

- c1. Apply applications of safety control methods for feeds and feedstuffs, measurement techniques and evaluation procedures.
- c2. Interpret feedstuff nutritive values in the elaboration and use of feed composition tables.
- c3. Select and decide available data about different rations, malnutrition diseases, and metabolic disorders.



## Course specification

c4. Write suitable report on the field clinical and subclinical cases of rations formulations.

### **d-General and transferable skills**

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

- d1. Use the computer and IT tools scientific research.
- d2. Manage time and apply self-learning.
- d3. Work in group.
- d4. Communicate effectively with clinical cases, nutrition specialists and farm owners.

### 4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
<b>Third year-second term</b> (Lec. 2 h./week, Pract.3 h./week)	1-Digestibility of food	2	2	-
	2- Feeding standards and nutrient requirements for: 3.1. maintenance 3.2. growth 3.3. fattening 3.4.reproduction &lactation 3.5.work 3.6.wool production	6	6	-
	3-Feeding of cattle & buffaloes and clinical nutrition	6	6	-
	4-Feeding of sheep & goats and clinical nutrition	6	6	-
	5-Feeding of poultry & rabbits and clinical nutrition	4	4	-
	6-Feed analysis & evaluation	12	-	12
	7-Green forages-hay making & silage	9	-	9
	8-Coarse roughages	9	-	9
	9-Feed additives	3	2	-
	10-Feeding standard & ration formulation	9	-	9
	<b>Total</b>		65	26

### 5-Teaching and learning methods

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

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

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

- **Lectures:**

Depends on the sharing efforts of the students and supported with macromedia and multimedia aids.



## Course specification

- **Training visits:**  
Visits to animal and poultry farms and feed processing plants.
- **Practical sections:**
  - Feed samples examination and analysis.
  - Laboratory rations formulation using suitable methods.
  - Application of rules and problem solving in clinical cases.
- **Self-learning:** Electronic learning, Seminars, scientific search on related websites, international, national and local journals, and related books in faculty library.
- **Assays**
- **Discussion groups**

### 6-Teaching and learning methods for the students with disabilities

Office hours and special meeting

### 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
Final Exam	a1 to a3	b1 to b3	c1, c3	
Practical Exam	a1, a2, a3	b1 to b3	c1 to c4	
Oral Exam	a1 to a3	b1 to b3	c1 to c4	d1 to d4

#### 7.2. Assessment schedules/semester:

Method	Week(s)
Practical exams	14 <sup>th</sup> , 15 <sup>th</sup> week
Final exams	16 <sup>th</sup> , 17 <sup>th</sup> week
Oral Exam	managed by the department
Student activities	Along the semester

#### 7.3. Weight of assessments:

Assessment	Weight of assessment
Practical exams	30%
Final exams	50%
Oral Exam	10%
Student activities	10%
	100%

### 8- List of references

#### 8.1. Notes and books

Departmental notes on:

1-Text book of Animal and Poultry Nutrition, part 1 & 2

2-Practical notes of Feeding stuffs and formulation of Ration, part 1& 2



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## **Course specification**

### **8.2. Essential books:**

- 1- McDonald, P., R.A .Edwards and J.F.D. Greenhalgh (1987), Animal Nutrition, 4<sup>th</sup> edition.
- 2- Cheek, P.R. (1991): Applied Animal Nutrition, Feeds and Feeding.
- 3- Pond, W. G., D.C. Church, and K .R. Pond (1995): Basic Animal Nutrition and Feeding, 4<sup>th</sup> edition.
- 4- Gillespie, J.R. (1987): Animal Nutrition and Feeding.
- 5- Church, D .C. (1991): Livestock Feeds and Feeding 3<sup>rd</sup> edition.

\*These books are found in the library of faculty of veterinary medicine, Beni-Suef University.

### **8.3. Recommended texts**

- 1-Cheek, P.R. (1987): Rabbit Feeding and Nutrition.
- 2-National Research Council (1988): Nutrient Requirements of Dairy Cattle, 6th rev .ed. Washington, D.C.: National Academy of Sciences.
- 3-National Research Council (1985): Nutrient Requirements of Sheep, 6th rev. ed. Washington, D.C.: National Academy of Sciences.
- 4-National Research Council (1996): Nutrient Requirements of Beef Cattle, 7th rev. ed. Washington, D.C.: National Academy of Sciences.
- 5-Frape, D. (1998): Equine Nutrition And Feeding .2<sup>nd</sup> ed.

\*These books are found in the library of faculty of veterinary medicine, Beni-Suef University.

### **8.4. Journals, Websites .....etc.**

#### **Journals:**

- 1-Journal of Nutrition
- 2-Journal of Animal Science
- 3-Journal of Agriculture Science
- 4-Nutrition Abstracts and Reviews
- 5-Journal of Poultry Science
- 6-Veterinary Record
- 7-Journal of Dairy Science

#### **Websites:**

- [www.google.com](http://www.google.com)
- [www.FAO](http://www.FAO)
- [www.Sciencedirect.com](http://www.Sciencedirect.com)
- [www.Net](http://www.Net) veterinary resources -Agricultural sites
- www. veterinary and agricultural web resources, livestock and poultry

**Course Coordinators**

**Head of Department**

**Name: Dr. Ibrahim Mohamed Ibrahim**

**Prof. Dr. Elham Saleh**

**Sig. :**



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## **Course specification**



## Course specification

	Topics	Week	Intended learning outcomes of course (ILOs)			
			K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
<b>First Semester</b>						
1.	Introduction & composition of the animal body and its food	1-2	a1, a2, a3, a4	b1	-	d1, d2
2.	Water and its metabolism	3-4	a1, a2, a3, a4	b1	-	d1, d2
3.	Carbohydrates and their metabolism	4-5	a1, a2, a3, a4	b1	-	d1, d2
4.	Proteins and their metabolism	5-6	a1, a2, a3, a4	b1	-	d1, d2
5.	Lipids and their metabolism	6-7	a1, a4	b2	c1, c2, c4	d1, d2
6.	Minerals 6.1. Introduction, distribution 6.2. Functions 6.3. deficiency 6.4. supplements	7-9	a4	-	c1, c4	d1, d2
7.	Vitamins 7.1. Vitamin and animal health 7.2. Fat-soluble vitamins 7.3. Water-soluble vitamins	10-11	a4	-	c1, c4	d1, d2
8.	Feed intake and factors affecting	12-13	a4	b1, b3	c3	d1, d2
9.	- Classification of feedstuffs - Nutrition terms	1-4	a2	b2	c1	d1, d2, d3
10.	- Concentrates, energy sources Deleterious factors in energy feeds	5-7				
11.	- Plant protein sources Deleterious factors in plant protein sources	8-10				
12.	- Animal protein sources and deleterious factors	11-13	a2, a4	b2	c1, c2, c3, c4	d1, d2, d3
<b>Second Semester</b>						
1.	-Digestibility of food	1-2	a1, a2, a3, a4	b1	-	d1, d2
2.	- Feeding standards and nutrient requirements for: - maintenance	2-4	a1, a2, a3, a4	b1	-	d1, d2



Beni Suef University  
Faculty of Veterinary Medicine

## Course specification

	-growth - fattening -reproduction &lactation -work -wool production					
3.	Feeding of cattle & buffaloes and clinical nutrition	5-7	a1, a2, a3, a4	b1	-	d1, d2
4.	Feeding of sheep & goats and clinical nutrition	8-10	a1, a2, a3, a4	b1	-	d1, d2
5.	Feeding of poultry & rabbits and clinical nutrition	11-12	a4	-	c1, c4	d1, d2
6.	Feed analysis & evaluation	1-4	a4	-	c1, c4	d1, d2
7.	Green forages-hay making & silage	5-7	a4	b1, b3	c3	d1, d2
8.	Coarse roughages	8-10	-	b2	c1	d1, d2
9.	Feed additives	12-13	a2	b2	c1	d1, d2, d3
10.	Feeding standard & ration formulation	11-13	a2, a4	b2	c1, c2, c3, c4	d1, d2, d3



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