



Course specification

1-Basic information

Course Code:	S3-FEED
Course title :	Nutrition and Clinical Nutrition
Academic year:	3 rd year
Program title:	B. Sc. Veterinary Medical sciences
Contact hours/ week	5 hours/week, (3 Lect./week, 2 Practical/week)
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

- 1- Specify all nutrients and its essentiality,
- 2- Explain the nutritional value of feedstuffs,
- 3- Study the critical nutrient requirements, and ration formulation in practical feeding situations.
- 4- 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 for nutrient needs by animals and poultry from their biochemical, nutritional, physiological and functional point of view.
- a2. Outline the effects of suboptimal or deficient feeding on animal condition, health, and performance to achieve maximum performance on minimal nutrient intake.
- a3. Evaluate the digestibility of feeds and its importance for evaluating feeds in different species.
- a4. Specify nutritive needs and 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. Design the interpretation of 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.
- c4. Write suitable report on the field clinical and subclinical cases of rations formulations.



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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 for scientific research & data analysis.
- 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
Third year-first term General feeding (Lec. h./week, Pract. h./week)	1-Introduction & composition of the animal body and its food	6	6	-
	2-Water and its metabolism	3	3	-
	3-Carbohydrates and their metabolism	3	3	-
	4-Proteins and their metabolism	3	3	-
	5-Lipids and their metabolism	3	3	-
	6- Minerals 6.1. Introduction, distribution 6.2. Functions 6.3. deficiency 6.4. supplements	9	9	-
	7-Vitamins 7.1. Vitamin and animal health 7.2. Fat-soluble vitamins 7.3. Water-soluble vitamins	6	6	-
	8- Feed intake and factors affecting	6	6	-
	9- Classification of feedstuffs - Nutrition terms	8	-	8
	10- Concentrates, energy sources Deleterious factors in energy feeds	6	-	6
	11- Plant protein sources Deleterious factors in plant protein sources	6	-	6
	12- Animal protein sources and deleterious factors	6	-	6
	Total		65	39
Third year-second term (Lec. h./week, Pract. h./week)	1-Digestibility of food	3	3	-
	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	9	9	-
	3-Feeding of cattle & buffaloes and clinical nutrition	9	9	-
	4-Feeding of sheep & goats and clinical nutrition	9	9	-
	5-Feeding of poultry & rabbits and clinical nutrition	6	6	-



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6-Feed analysis & evaluation	8	-	8
7-Green forages-hay making & silage	6	-	6
8-Coarse roughages	6	-	6
9-Feed additives	3	3	-
10-Feeding standard & ration formulation	6	-	6
Total	65	39	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.

- **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 a4	b1 to b3	c1, c3	
Practical Exam	a1, a2, a3	b1 to b3	c1 to c4	
Oral Exam	a1 to a4	b1 to b3	c1 to c4	d1 to d4

7.2. Assessment schedules/semester:



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Method	Week(s)
Practical exams	14 th , 15 th week
Final exams	16 th , 17 th 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	20%
Student activities	-----
	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

8.2. Essential books:

- 1- McDonald, P., R.A .Edwards and J.F.D. Greenhalgh (1987), Animal Nutrition, 4th 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, 4th edition.
- 4- Gillespie, J.R. (1987): Animal Nutrition and Feeding.
- 5- Church, D .C. (1991): Livestock Feeds and Feeding 3rd 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 .2nd ed.

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8.4. Journals, Websitesetc.

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
- www.FAO
- www.Sciencedirect.com
- www.Net veterinary resources -Agricultural sites
- www. veterinary and agricultural web resources, livestock and poultry

Course Coordinators

Name: Dr. Ibrahim Mohamed Ibrahim

Sig. :

Head of Department

Prof. Dr. Elham Saleh



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	Topics	Week	Intended learning outcomes of course (ILOs)			
			K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
First Semester						
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
Second Semester						
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



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	-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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