



Course specification

1-Basic information

| | |
|----------------------------|--|
| Course Code: | Basic of Nutrition (NUT:3131) |
| Course title : | Nutrition and Clinical Nutrition |
| Academic year: | 3 rd year/first semester |
| Program title: | B. Sc. Veterinary Medical sciences |
| Contact hours/ week | 5 hours/week, (2 Lect./week, 3 Practical/week) |
| Approval Date | 9/9/2018 |

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- 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. Mention nutritive needs to differentiate between excess and deficiency of different nutrients.

b-Intellectual skills

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

- b1. Interpret the different feeds composition and classification.
- b2. Compare between the different animals and poultry nutritional requirements and metabolic diseases.
- 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. Write feedstuff nutritive values in the elaboration.
- c3. Select and decide available data about different rations, malnutrition diseases, and metabolic disorders.

d-General and transferable skills

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

- d1. Use the computer and internet skills.
- d2. Manage time and apply self-learning.



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d3. Work in group.

d4. Communicate effectively with clinical cases, nutrition specialists and farm owners.

4-Topics and contents

| Course | Topic | weeks | No. of hours | Lectures | Practical |
|--|--|------------|--------------|----------|-----------|
| Third year- first semester General feeding 5 hours/week, (2 Lect./week, 3 Practical/week) | 1-Introduction & composition of the animal body and its food | 1 | 2 | 2 | - |
| | 2-Classification of feedstuffs | 1 | 3 | - | 3 |
| | 3-Water and its metabolism | 2 | 2 | 2 | - |
| | 4- Nutrition terms | 2, 3, 4 | 9 | - | 9 |
| | 5-Carbohydrates and their metabolism | 3 | 2 | 2 | - |
| | 6-Proteins and their metabolism | 4 | 2 | 2 | - |
| | 7-Lipids and their metabolism | 5 | 2 | 2 | - |
| | 8- Concentrates, energy sources | 5,6 | 6 | - | 6 |
| | 9- Minerals (macro and micro elements) 9.1. Introduction, distribution 9.2. Functions 9.3. deficiency 9.4. supplements | 6, 7, 8, 9 | 8 | 8 | - |
| | 10- Deleterious factors in energy feeds | 7 | 3 | - | 3 |
| | 11- Plant protein sources | 8, 9 | 6 | - | 6 |
| | 12-Vitamins 12.1. Vitamins and animal health 12.2. Fat-soluble vitamins 12.3. Water-soluble vitamins | 10, 11 | 4 | 4 | - |
| | 13- Deleterious factors in plant | 10 | 3 | - | 3 |
| | 14- Feed analysis & evaluation | 11, 12, 13 | 9 | - | 9 |
| | 15- Feed intake and factors affecting | 12 | 2 | 2 | - |
| | 16- Feed additives | 13 | 2 | 2 | - |
| Total | | 13 | 65 | 26 | 39 |

5-Teaching and learning methods

- Lectures** (brain storm, discussion, using board, and data shows)
- **Self learning** by preparing essays and presentations (computer searches and faculty library)
- 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.
- Essays**



Course specification

-Discussion groups

6-Teaching and learning methods for the students with disabilities

Not applicable

7-Student assessment

7.1. Assessments methods:

| Method | Matrix alignment of the measured ILOs/ Assessments methods | | | |
|----------------|--|----------|----------|----------|
| | K&U | IS | P&P.S | G.S |
| Written Exam | a1 to a3 | b1 to b3 | | |
| Practical Exam | | | c1 to c3 | |
| Oral Exam | a1 to a3 | b1 to b3 | c1 to c3 | d1 to d4 |

7.2. Assessment schedules/semester:

| Method | Week(s) |
|--------------------|--|
| Practical exams | 14 th week |
| Written exams | 15 th – 18 th week |
| Oral Exam | 15 th – 18 th week |
| Student activities | Along the semester |

7.3. Weight of assessments:

| Assessment | Weight of assessment |
|--------------------|----------------------|
| Practical exams | 30% |
| Written exams | 50% |
| Oral Exam | 20% |
| Student activities | 10% |
| Total | 100% |

8- List of references

8.1. Notes and books

Department notes:

- 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:

- ١- Cheek, P.R. (1991): Applied Animal Nutrition, Feeds and Feeding.
- ٢- Church, D .C. (1991): Livestock Feeds and Feeding 3rd edition.
- 3-Gillespie, J.R. (1987): Animal Nutrition and Feeding.
- 4-McDonald, P., R.A .Edwards and J.F.D. Greenhalgh (1987), Animal Nutrition, 4th edition.



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5- Pond, W. G., D.C. Church, and K .R. Pond (1995): Basic Animal Nutrition and Feeding, 4th edition.

*These books available at the library of faculty of veterinary medicine, Beni-Suef University.

8.3. Recommended text books:

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

*These books available at the library of faculty of veterinary medicine, Beni-Suef University.

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 Coordinator

Head of Department



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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 | a1, a2, a3 | b1, b2 | - | d1, d2, d3 |
| 2. | Classification of feedstuffs | 1 | | | c1 | d1, d2, d3 |
| 3. | Water and its metabolism | 2 | a1, a2, a3 | b1, b2 | - | d1, d2, d3 |
| 4. | Nutrition terms | 2, 3, 4 | | | c3 | d1, d2, d3 |
| 5. | Carbohydrates and their metabolism | 3 | a1, a2, a3 | b2 | | d1, d2, d3 |
| 6. | Proteins and their metabolism | 4 | a1, a2, a3 | b1, b2, b3 | | d1, d2, d3 |
| 7. | Lipids and their metabolism | 5 | a1, a2, a3 | b1, b2, b3 | | d1, d2, d3 |
| 8. | Concentrates, energy sources | 5,6 | | | c1, c2, c3 | d1, d2, d3, d4 |
| 9. | Minerals (macro and micro elements) 9.1. Introduction, distribution 9.2. Functions 9.3. deficiency 9.4. supplements | 6, 7, 8, 9 | a1, a2, a3 | b1, b2, b3 | | d1, d2, d3, d4 |
| 10. | Deleterious factors in energy feeds | 7 | | | c2 | d1, d2, d3, d4 |
| 11. | Plant protein sources | 8, 9 | | | c1, c2 | d1, d2 |
| 12. | Vitamins 12.1. Vitamins and animal health 12.2. Fat-soluble vitamins 12.3. Water-soluble vitamins | 10, 11 | a1, a2, a3 | b2 | c1, c2, c3 | d1, d2, d3 |
| 13. | Deleterious factors in plant protein sources | 10 | | | c2 | d1, d2 |
| 14. | Feed analysis & evaluation | 11, 12, 13 | | | c1, c2, c3 | d1, d2, d3, d4 |
| 15. | Feed intake and factors affecting | 12 | a2, a3 | b2 | | d1, d2, d3, d4 |
| 16. | Feed additives | 13 | a2, a3 | b2 | | d1, d2, d3, d4 |



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1-Basic information

| | |
|----------------------------|--|
| Course Code: | Nutrition (Special) (NUT:3238) |
| Course title : | Nutrition and Clinical Nutrition |
| Academic year: | 3 rd year/second semester |
| Program title: | B. Sc. Veterinary Medical sciences |
| Contact hours/ week | 5 hours/week, (2 Lect./week, 3 Practical/week) |
| Approval Date | 9/9/2018 |

2-Professional information

Overall aims of course:

This course aims to:

- 4- Study the critical nutrient requirements, and ration formulation in practical feeding situations.
- 5- 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. Explain 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. Mention clinical aspects of the different body functions; maintenance, growth, fattening and reproduction.

b-Intellectual skills

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

- b1. Create proper decision in farms especially those related to increase production using least cost ration formulation.
- b2. Compare among the different animals and poultry nutritional requirements.
- b3. Interpret the results of feed processing and its advantages in the diet.

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. Design 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.



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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 | week | No. of hours | Lectures | Practical |
|--|---|--------------|--------------|----------|-----------|
| Third year- second semester (Lec. 2 h./week, Pract 3h./week) | 1-Digestibility of food | 1 | 2 | 2 | - |
| | 2-Animal protein sources and deleterious factors | 1,2 | 6 | - | 6 |
| | ٣- Feeding standards and nutrient requirements for: 3.1. maintenance 3.2.growth 3.3. fattening 3.4.reproduction 3.5. Lactation | 2,3,4,5 | 8 | 8 | - |
| | 4-Leguminous forages and grasses | 3 | 3 | - | 3 |
| | 5-Silage | 4 | 3 | - | 3 |
| | 6-Feeding of cattle & buffaloes | 6,7,8 | 6 | 6 | - |
| | 7-Tibn and hay | 5 | 3 | - | 3 |
| | 8- Feeding standard & ration formulation | 6 | 3 | - | 3 |
| | 9- Ration formulation of cattle & buffaloes | 7,8,9 | 9 | - | 9 |
| | 10-Feeding of sheep & goats | 9,10 | 4 | 4 | - |
| | 11- Ration formulation of sheep & goats | 10,11 | 6 | - | 6 |
| | ١٢-Feeding of poultry & rabbits | 11, 12,13 | 6 | 6 | - |
| | 13- Ration formulation of poultry & rabbits | 12,13 | 6 | - | 6 |
| | Total | | 13 | 65 | 26 |

5-Teaching and learning methods

- Lectures** (brain storm, discussion, using board, and data shows)
- **Self learning** by preparing essays and presentations (computer searches and faculty library)
- Training visits:**



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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.

-Essays

-Discussion groups

6-Teaching and learning methods for the students with disabilities

Not applicable

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Course Coordinator

Head of Department



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| Topics | Week | Intended learning outcomes of course | | |
|--|-----------|--------------------------------------|----------|-------------|
| | | K&U (a) | I.S (b) | P.P.S (c) |
| Quality of food | 1 | a1, a2 | b1 | - |
| Protein sources and deleterious factors | 1,2 | | b1,b3 | c1,c2,c3,c4 |
| Standards and nutrient requirements for: 1. maintenance 2.growth 3. fattening 4.reproduction 5. Lactation | 2,3,4,5 | a2, a3 | b2 | - |
| Quality of forages and grasses | 3 | a1, a2, a3 | b2 | c1,,c3,c4 |
| | 4 | | b3 | c1, c2 |
| Quality of cattle & buffaloes | 6,7,8 | a1, a2, a3 | b2 | c1,c3, c4 |
| Quality of poultry | 5 | | b3 | c1,c2 |
| Standard & ration formulation | 6 | a2, a3 | b2 | c1,,c3,c4 |
| Ration formulation of cattle & buffaloes | 7,8,9 | a2 | b2 | c1,c2,c3,c4 |
| Ration formulation of sheep & goats | 9,10 | a1, a2, a3 | b1,b2,b3 | c1, c3, c4 |
| Ration formulation of sheep & goats | 10,11 | - | - | c2, c3 |
| Ration formulation of poultry & rabbits | 11, 12,13 | | | |
| Ration formulation of poultry & rabbits | 12,13 | | | |