**Beni Suef University**
**Faculty of Veterinary Medicine**
**Department of Nutrition and Clinical Nutrition**

---

# Program Specification for Master Degree of Nutrition and Clinical Nutrition 2017-2018

## A-Basic information:

**1- Program title:** *MVSC.,*
**2- Program type:** *Single*
**3- Department offering program: Nutrition and Clinical Nutrition**
**4-Academic year:** *2017-2018*
**5-Approval date of Department Council:**
**6-Approval date of Faculty Council:**
**7-External evaluator:**

## B-Professional information:

### 1- Overall aims of the program:

1- Use efficiently the most recent techniques and improve the skills of nutrition and clinical nutrition scientific research.

2- Collect, manage, analyze the scientific data in veterinary practice and solve the veterinary & environmental problems based on scientific and research evidence.

3- Be aware about his role in community development and environment protection, regarding the national and international changes.

4- Develop communication skills and improve scientific co-operation in research groups.

5- Write the dissertation, scientific papers and apply for scientific projects.

6- Have a commitment to veterinary professional practice regulations and ethics.

### 2- Intended learning outcomes of course (ILOs):

### a- Knowledge and understanding:

**On successful completion of this program the graduate should be able to:**

a1- Acquire the advanced concepts in veterinary and public health practice and other career related sciences.

a2- Describe the veterinary professional practice and its relation to environmental

protection and developing.

a3- Recognize up to date veterinary research.

a4- Identify efficiently veterinary professional practice regulations and ethics.

a5- State quality principles and basics in veterinary professional practice.

a6- Mention scientific research principles and ethics

## b- Intellectual skills:

## On successful completion of master program the graduate should be able to:

b1- Ana lays the veterinary information for problem solving.

b2- Create solution veterinary problems with inadequacy of some resources.

b3- Distinguish different knowledge to solve veterinary professional problems.

b4- Design a scientific research plan.

b5- Calculate the veterinary risks.

b6- Plan for enhancing veterinarian performance.

b7- Set up a decision in variable professional and research practice.

b8- critically evaluate their own research data and develop new approach to solving their research questions

b9- Practice creative approaches to solving technical problems or issues associate with running and researches project.

## c- Professional and practical skills:

## On successful completion of this program the graduate should be able to:

c1- Apply the principles of good experimental design and analysis to their own research project .

c2- Perform relevant statistical analysis on data obtained for their own research .

c3- Perform masterly the recent veterinary professional practice.

c4- Write and evaluate the veterinary professional reports, scientific paper and dissertation.

c5- Evaluate the available and required material, tools and equipment in veterinary research projects.

## d- General and transferable skills:

## On successful completion of this program the graduate should be able to:

d1- Communicate effectively and use of information technology in the development of

veterinary professional practice.

d2- Own Self-evaluation and need assessment.

d3- Utilize different available resources for efficient obtaining of knowledge and information.

d4- Issue the regulations and indicators for performance evaluation.

d5- Mange time efficiently and work in research groups.

d6- Lead a team work in different professional practice.

d7- Have continuous and self-learning.

## 3- Academic standers:

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

* Postgraduates NARS (March 2009) Master 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- Program Structure and Contents

**A- Program duration**: At least two academic years from the approval of registration by the Faculty Council and maximum four years. The faculty council has the right to give the applicant another period not exceed two years according to the supervisor request

The first year for preliminary courses study, while the second year for researches and preparation of the Master Thesis.

**B- Program structure: Hours/ week:**

**Basic course:-**

| Theoretical | 4 | Practical | 7 | Total | 11 |
|---|---|---|---|---|---|

**Subsidiary courses:-**

| Theoretical | 5-8 | Practical | 6-10 | Total | 11-18 |
|---|---|---|---|---|---|

**Master Thesis: completed during the second academic year.**

**C- Program courses:**

**1- basic courses**

| Code | Course title | Hours /week | | Academic year | Teaching duration |
|---|---|---|---|---|---|
| | | theoritical | practical | | |
| | Master Principal course | 3 | 4 | Preliminary year | 36 weeks |
| | Research methods | 1 | 3 | Preliminary year | 36 weeks |

**2-subsidiary courses**

| Code | Course title | Hours /week | | Academic year | Semester |
|---|---|---|---|---|---|
| | | theoretical | Practical | | |
| | Selected (3-5) courses depending on the thesis title from the various Faculty Master courses other than specialty of the Master. | 5-8 | 6-10 | Preliminary year | 36 weeks |

**D- Courses contents**

**See master courses specification**

## 5- Program Admission Requirements

a- According to the Faculty of Veterinary Medicine, Beni-Suef University Bylaws for Post Graduate Programs, applicants should have BVSc., from an Egyptian University or equivalent degree from any approved university, with at least general grade (Good) and (Very Good) in the specialized subject.

b- Also if the student has postgraduate diploma in one specialization of total (3 hours) at least with general grade (Good) and (Very good) in the specialized subject.

c- According to Beni-Suef University requirements, all applicants for postgraduate studies should fulfill preliminary courses on the following subjects:

I- English language (Toefl or equivalent degree)

d- Admission to the program is open during March and September annually after at least one year from the BVSc degree.

## 6. Regulations for Progression and Program Completion

After finishing the preliminary courses, the graduate student will be eligible to sit for the examination according to the following roles:

| No. of course teaching hours/ week | Allowed time for written exam. | Degree | |
|---|---|---|---|
| | | Theoretical | Practical and oral exam |
| ≥ 3 hours | 3 hours | 50 | 50 |
| Less than 3 hours | 2 hours | 25 | 25 |

- It is mandatory to pass all the courses each chance except biostatistic (212)
-The passing mark in each exam is ⩾ 60%.
-The faculty council has the right to deprive the applicant from entering the exams if his attendance courses is less than 75% .

**Qualification grades:**

| | |
|---|---|
| **Excellent** | ≥ 90 |
| **Very good** | From 80 to89 |
| **Good** | From 70 to79 |
| **Pass** | From 60to 69 |
| **Failed** | 45 to less than 60 weak |
| | Less than 45 Very weak |

-After passing, the graduate starts research for Master Thesis at the beginning of the second year.
-The candidate will receive his degree after evaluating and approving the thesis by a committee according to University regulations.
-The applicant should publish at least one scientific papers from the thesis in local or international journals

## 7-Graduate student assessment

**A: Assessment Tools**

According the Faculty of Veterinary Medicine, Beni-Suef University Bylaws for Post Graduate, students should be assessed at the end of preliminary year and the thesis should be evaluated and approved by a committee according to University regulations.

**1-Preliminary year**

| Assessments methods for each course | practical exam | Oral exam | Written exam |
|---|---|---|---|
| Time of Assessments | By the end of the year | By the end of the year | By the end of the year |
| Marks | 25% | 25% | 50% |

**2-Master Thesis:**

All master-degree students should prepare a thesis in cytology and histology. The department council must approve the protocol (plan) of the research. The thesis is supervised by one or more staff members and may include other specialties according to the nature of the research. The thesis should be evaluated and approved by a committee according to University regulations.The applicant should publish at least one scientific paper from the thesis in local or international journals

**Course coordinator** **Head of the Department**

**Name: Dr. Asmaa S. A. Abdel-Daim** **Prof. Dr. Elham Saleh**

**Sig. :**

**Master Program Specification Matrix (Program Courses with ILOS)**

| Program ILOs | | Courses |
|---|---|---|
| **Knowledge and understanding** | a1 | M-49 to M-85+principle course |
| | a2 | M-49to M-58 +principle course and thesis |
| | a3 | Thesis |
| | a4 | M-49, M-50,M-51,M-57 +principle course and thesis |
| | a5 | M-49 to M-85+principle course |
| | a6 | Thesis |
| **Intellectual skills** | b1 | M-49 to M-85+principle course |
| | b2 | M-49 to M-85+principle course and thesis |
| | b3 | Thesis |
| | b4 | Thesis |
| | b5 | Thesis |
| | b6 | M-49 to M-85+principle course |
| | b7 | Thesis |
| | b8 | Thesis |
| | b9 | Thesis |
| **Professional and practical skills** | c1 | Thesis |
| | c2 | Thesis |
| | c3 | M-49 to M-85+principle course and thesis |
| | c4 | Thesis |
| | c5 | Thesis |
| **General and transferable skills** | d1 | M-49to M-58 and thesis |
| | d2 | M-49to M-58 and thesis |
| | d3 | M-49to M-58 and thesis |
| | d4 | M-49to M-58 and thesis |
| | d5 | M-49to M-58 and thesis |
| | d6 | M-49to M-58 and thesis |
| | d7 | M-49to M-58 and thesis |

# Master Program Specification Matrix (Program ILOS with Academic standers ARS)

| **Academic standers**<br><br>**Program ILOs** | | **Knowledge and understanding** | | | | | | **Intellectual skills** | | | | | | | **Professional and practical skills** | | | | **General and transferable skills** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **a1** | a2 | **a 3** | **a 4** | **a5** | **a6** | **b1** | **b 2** | **b 3** | **b4** | **b 5** | **b6** | **b 7** | **c1** | **c2** | **c3** | **c4** | **d1** | **d2** | **d3** | **d4** | **d5** | **d6** | **d7** |
| Knowledge and understanding | a1 | √ | | | | | | | | | | | | | | | | | | | | | | | |
| | **a2** | | √ | | | | | | | | | | | | | | | | | | | | | | |
| | **a3** | | | √ | | | | | | | | | | | | | | | | | | | | | |
| | **a4** | | | | √ | | | | | | | | | | | | | | | | | | | | |
| | **a5** | | | | | √ | | | | | | | | | | | | | | | | | | | |
| | **a6** | | | | | | √ | | | | | | | | | | | | | | | | | | |
| Intellectual skills | b1 | | | | | | | √ | | | | | | | | | | | | | | | | | |
| | **b2** | | | | | | | | √ | | | | | | | | | | | | | | | | |
| | **b3** | | | | | | | | | √ | | | | | | | | | | | | | | | |
| | **b4** | | | | | | | | | | √ | | | | | | | | | | | | | | |
| | **b5** | | | | | | | | | | | √ | | | | | | | | | | | | | |
| | **b6** | | | | | | | | | | | | √ | | | | | | | | | | | | |
| | **b7** | | | | | | | | | √ | | | | | | | | | | | | | | | |
| | **b8** | | | | | | | | | | | | √ | | | | | | | | | | | | |
| | **b9** | | | | | | | | | | √ | | | | | | | | | | | | | | |
| Professional and practical skills | c1 | | | | | | | | | | | | | | √ | | | | | | | | | | |
| | **c2** | | | | | | | | | | | | | | | √ | | | | | | | | | |
| | **c3** | | | | | | | | | | | | | | | | √ | | | | | | | | |
| | **c4** | | | | | | | | | | | | | | | | | √ | | | | | | | |
| | **c5** | | | | | | | | | | | | | | | | | √ | | | | | | | |
| **General and** | **d1** | | | | | | | | | | | | | | | | | | √ | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **transferable skills** | **d2** | | | | | | | | | | | | | | | | | | | √ | | | | | |
| | **d3** | | | | | | | | | | | | | | | | | | | | √ | | | | |
| | **d4** | | | | | | | | | | | | | | | | | | | | | √ | | | |
| | **d5** | | | | | | | | | | | | | | | | | | | | | | √ | | √ |
| | **d6** | | | | | | | | | | | | | | | | | | | √ | | | √ | | |
| | **d7** | | | | | | | | | | | | | | | | | | | | | | √ | √ | |

# Program aims – ILOS Matrix for the Master program (MVSc)

# مصفوفة اهداف البرنامج مع مخرجات التعلم المستهدفة

| Program ILOS | | Program aims | | | | | |
|---|---|---|---|---|---|---|---|
| | | a- Use efficiently the most recent techniques and improve the skills of nutrition and clinical nutrition scientific research. | b- Collect, manage, analyze the scientific data in veterinary practice and solve the veterinary & environmental problems based on scientific and research evidence. | c-Be aware about his role in community development and environment protection, regarding the national and international changes. | d- Develop communication skills and improve scientific co-operation in research groups. | e- Write the dissertation, scientific papers and apply for scientific projects. | f-Have a commitment to veterinary professional practice regulations and ethics. |
| Knowledge and understanding | a1. Acquire the advanced concepts in veterinary and public health practice and other career related sciences. | √ | | | | | |
| | a2.Describe the veterinary professional practice and its relation to environmental protection and developing. | | | √ | | | |
| | a3- Recognize up to date veterinary research. | | √ | | | | |
| | a4- Identify efficiently veterinary professional practice regulations and ethics. | | | | | | √ |
| | a5- State quality | | √ | | | | |

| Program ILOS | | Program aims | | | | | |
|---|---|---|---|---|---|---|---|
| | | a- Use efficiently the most recent techniques and improve the skills of nutrition and clinical nutrition scientific research. | b- Collect, manage, analyze the scientific data in veterinary practice and solve the veterinary & environmental problems based on scientific and research evidence. | c-Be aware about his role in community development and environment protection, regarding the national and international changes. | d- Develop communication skills and improve scientific co-operation in research groups. | e- Write the dissertation, scientific papers and apply for scientific projects. | f-Have a commitment to veterinary professional practice regulations and ethics. |
| | principles and basics in veterinary professional practice. | | | | | | |
| | a6- Mention scientific research principles and ethics. | | | | | √ | |
| | | | | | | | |
| Intellectual skills | b1) Analays the veterinary information for problem solving. | | √ | | | | |
| | b2) Create solution veterinary problems with inadequacy of some resources. | | | √ | √ | | |
| | b3) Distinguish different knowledge to solve veterinary professional problems | | √ | | √ | | |
| | b4) Design a scientific research plan | | | | √ | √ | |
| | b5) Calculate the veterinary risks. | | √ | | | | |
| | b6) Plan for enhancing veterinarian performance. | √ | | | | | |

| Program ILOS | | Program aims | | | | | |
|---|---|---|---|---|---|---|---|
| | | a- Use efficiently the most recent techniques and improve the skills of nutrition and clinical nutrition scientific research. | b- Collect, manage, analyze the scientific data in veterinary practice and solve the veterinary & environmental problems based on scientific and research evidence. | c-Be aware about his role in community development and environment protection, regarding the national and international changes. | d- Develop communication skills and improve scientific co-operation in research groups. | e- Write the dissertation, scientific papers and apply for scientific projects. | f-Have a commitment to veterinary professional practice regulations and ethics. |
| | b7) Set up a decision in variable professional and research practice. | | | | | √ | √ |
| | b8) critically evaluate their own research data and develop new approach to solving their research questions . | | √ | | | √ | |
| | b9) Practice creative approaches to solving technical problems or issues associate with running and researches project. | | √ | √ | | | |
| | | | | | | | |
| Practical and professional skills | c1- Apply the principles of good experimental design and analysis to their own research project. | | | | | √ | √ |
| | c2- Perform relevant statistical analysis on data obtained for their | | | | | √ | |

| Program ILOS | | Program aims | | | | | |
|---|---|---|---|---|---|---|---|
| | | a- Use efficiently the most recent techniques and improve the skills of nutrition and clinical nutrition scientific research. | b- Collect, manage, analyze the scientific data in veterinary practice and solve the veterinary & environmental problems based on scientific and research evidence. | c-Be aware about his role in community development and environment protection, regarding the national and international changes. | d- Develop communication skills and improve scientific co-operation in research groups. | e- Write the dissertation, scientific papers and apply for scientific projects. | f-Have a commitment to veterinary professional practice regulations and ethics. |
| | own research | | | | | | |
| | c3- Perform masterly the recent veterinary professional practice | √ | | | | | |
| | c4- Write and evaluate the veterinary professional reports, scientific paper and dissertation | | | | | √ | |
| | c5- Evaluate the available and required material, tools and equipment in veterinary research projects | | √ | | | √ | |
| General and transferable skills | d1-Communicate effectively and use of information technology in the development of veterinary professional practice. | | | | | √ | |
| | d2- Own Self-evaluation and need | | | | | | √ |

| Program ILOS | | Program aims | | | | | |
|---|---|---|---|---|---|---|---|
| | | a- Use efficiently the most recent techniques and improve the skills of nutrition and clinical nutrition scientific research. | b- Collect, manage, analyze the scientific data in veterinary practice and solve the veterinary & environmental problems based on scientific and research evidence. | c-Be aware about his role in community development and environment protection, regarding the national and international changes. | d- Develop communication skills and improve scientific co-operation in research groups. | e- Write the dissertation, scientific papers and apply for scientific projects. | f-Have a commitment to veterinary professional practice regulations and ethics. |
| | assessment. | | | | | | |
| | d3- Utilize different available resources for efficient obtaining of knowledge and information. | | | | √ | | |
| | d4- Issue the regulations and indicators for performance evaluation. | | | √ | | | |
| | d5- Mange time efficiently and work in research groups. | | | | √ | | |
| | Lead a team work in different professional practice. | | | | √ | | |
| | Have continuous and self-learning | √ | | | | | |

Beni-Suef University
Faculty of Veterinary Medicine

# Course specification of postgraduate

## 1-Basic information

| | |
|---|---|
| **Course Code:** | MBC-FEED |
| **Course title :** | Primary course of Nutrition and Clinical Nutrition for MVSc students |
| **Program title:** | MVSc (Nutrition and Clinical Nutrition) |
| **Contact hours/ week** | Lecture: 3 Practical: 4 Total: 7 |
| **Approval Date** | |

## 2-Professional information

**Overall aims of course**:

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

- Properly apply the principles of scientific research and use its different tools.
- Apply the analytical approach and its use in the field of animal nutrition.
- Employ the acquired knowledge about nutritional requirements together with other related sciences in his/her professional practices.
- Show awareness of current problems and recent theories in the field of rations formulation.
- Identify the practical problems facing feed industry and their solutions.
- Master different professional skills and techniques in diagnosis, prevention and control of nutritional disorders.
- Effectively communicate and lead teamwork.
- Make decisions in different professional and practical contexts.
- Effectively use and maintain the available facilities and resources.
- Show awareness of his/her role in community development and environmental conservation in the field of nutrients metabolism and requirements in the light of global and regional variables.
- Commit the moral and legal rules of nutritional specialist.
- Perform academic and professional self development and continuous learning.

## 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 information about nutritional requirements, animal and poultry feed stuffs and bases of animal and poultry feed formulation.

a2. Underline specialized theories and knowledge in the field of animal and poultry nutritional problems and related sciences.

a3. Identify the legal and moral rules in different animal and poultry nutritional disorder prevention and control practices.

a4. Recognize principles and morals of scientific research.

a5. Define the advanced scientific means serving the field of rations formulations and the development of feed industry.

a6. Review the mutual influence between different professional practices and their impacts on

# Course specification of postgraduate

the environment.

a7. Identify the principals of application of different quality management systems in animal and poultry feeding sectors and practices.

**b-Intellectual skills**

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

b1. Demonstrate knowledge related to animal nutrition and interpret it to solve the related problems.

b2. Create solutions for field problems affecting animal nutrition and economics using the available data.

b3. Construct research studies that add new knowledge to the area of animal nutrition.

b4. Design scientific papers.

b5. Illustrate different risk factors for each practice related to diagnosis, prevention and control of nutritional diseases of animals.

b6. Properly plan for performance enhancement in different feeding system and requirements calculation.

b7. Set up decisions using the available information in different practices related to animal feeding

**C- Professional and practical skills**

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

c1. Perfectly perform different conventional and advanced techniques in the field of feeding system and ration formulation.

c2. Write and evaluate reports related to animal nutrition and feeding.

c3. Evaluate different available tools and methods regarding feed analysis and evaluation.

**d- General and transferable skills**

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

d1. Communicate effectively using different means.

d2. Properly use the information technologies for development of his/her professional abilities.

d3. Assess him / her self and learn how to detect his/her learning requirements.

d4. Use different facilities for gaining knowledge and information.

d5. Learn how to work effectively as part of a team and properly manage the time.

d6. Lead teamwork effectively.

d7. Understand the significance and means of continuous self learning.

d8. Create rules and indicators for evaluation of the performance of others.

## 4-Topics and contents

| Course | Topic | Weeks | No. of hours | Lectures | Practical |
|---|---|---|---|---|---|

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| (Lec. 2h./week, Pract 2h./week) | **Animal nutrition fundamentals Composition of the animal body and its food** | 1,2 | 9 | 9 | - |
| | **Feedstuffs - Classification of feedstuffs** | 1 | 4 | - | 4 |
| | **- Nutrition terms** | 2,3 | 8 | - | 8 |
| | **Water and its metabolism** | 3 | 3 | 3 | - |
| | **Concentrates as energy sources & deleterious factors** | 4,5,6 | 12 | - | 12 |
| | **Carbohydrates and their metabolism** | 4 | 3 | 3 | - |
| | **Proteins and their metabolism** | 5 | 3 | 3 | - |
| | **Lipids and their metabolism.** | 6 | 3 | 3 | - |
| | **Plant protein sources & deleterious factors** | 7,8,9 | 12 | - | 12 |
| | **Minerals- macro & microelements - Introduction, distribution, functions - Deficiencies, supplements** | 7,8,9,10, 11 | 15 | 15 | - |
| | **-Forage and roughage** | 10,11,12 ,13 | 16 | - | 16 |
| | **Vitamins - Vitamin and animal health - Fat-soluble vitamins - Water-soluble vitamins** | 12,13,14 ,15 | 12 | 12 | - |
| | **-Feed processing and manufacture** | 14,15,16 ,17 | 16 | - | 16 |
| | **Feed intake and factors affecting** | 16,17 | 6 | 6 | - |
| | **Feedstuffs analyses -Physical inspection** | 18,19,20 | 12 | - | 12 |
| | **Digestion & absorption Digestibility of feeds** | 18,19,20 | 9 | 9 | - |
| | **-Microscopical examination -Chemical analyses -Using standard feed analyses tables** | 21,22,23 ,24,25 | 20 | - | 20 |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | **Feeding standards and nutritional requirements for:**<br>**-maintenance**<br>**-growth**<br>**-fattening** | 21,22 | 6 | 6 | - |
| | **-reproduction and lactation**<br>**-work production**<br>**-wool production** | 23,24,25 | 9 | 9 | - |
| | **Ration formulation methods** | 26 | 4 | - | 4 |
| | **Feeding farm animals**<br>**-Feeding dairy cows and calves**<br>**-Feeding buffalos** | 26,27,28 | 9 | 9 | - |
| | **Ration formulation of dairy cattle** | 27,28,29 | 12 | - | 12 |
| | **-Feeding sheep and goat**<br>**-Feeding camel** | 29,30,31 | 9 | 9 | - |
| | **Ration formulation of sheep and goat**<br>**Ration formulation of camel** | 30,31 | 8 | - | 8 |
| | **-Feeding equine** | 32,33 | 6 | 6 | - |
| | **Ration formulation of equine** | 32 | 4 | - | 4 |
| | **-Feeding poultry** | 34, 35 | 6 | 6 | - |
| | **Ration formulation for poultry** | 33,34 | 8 | - | 8 |
| | **Feed additives-**<br>**-Introduction** | 36 | 3 | 3 | - |
| | **-Nutritional feed additives**<br>**-Non Nutritional feed additives** | 35,36 | 8 | - | 8 |
| | Total | | 252 | 108 | 144 |

## 5-Teaching and learning methods

## 5-Teaching and learning methods

- **Lectures:**
  Depends on the sharing efforts of the students and supported with multimedia aids, discussion, brain storming.
- **Practical sections:**

- Identification of feedstuffs and their evaluation.
- Laboratory feed inspection and chemical analysis.
- Requirements calculation and ration formulation.

# Course specification of postgraduate

- **Self-learning:** Electronic learning, scientific search on related websites, international, national and local journals, and related books in faculty library.
- **Essays and reviews**
- **Discussion groups**

## 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 |
| Written Exam | a1 to a5 | b1 to b3 | | |
| Practical Exam | | | c1 to c2 | |
| Oral Exam | a1 to a5 | b1 to b3 | c1 to c2 | d1 to d3 |

**6.2. Assessment schedules**

| Method | Week(s) |
|---|---|
| Written exam | During December |
| Practical exam | During December |
| Oral exam | During December |
| Student activities | Along the year |

**7.3. Weight of assessments**

| Assessment | Weight of assessment |
|---|---|
| Writing exam | 50% |
| Practical exam | 25% |
| Oral exam | 25% |
| total | 100% |

## 7- List of references

**7.1. Notes and books**

**Textbook of Animal and Poultry Nutrition – part 1**

**Practical of feedstuffs and ration formulation – part 1**

**Textbook of Animal and Poultry Nutrition – part 2**

**Practical of feedstuffs and ration formulation – part 2**

**Textbook of Human Nutrition and Animal Byproducts.**

**7.2. Essential books:**

# Course specification of postgraduate

**1-Cheeke , P.R.(1991): Applied Animal Nutrition, Feeds and Feeding.**
**2- 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.**
**5-Pond, W. G., D.C. Church, and K .R. Pond (1995): Basic Animal Nutrition and Feeding, 4th edition.**

**7.3. Recommended texts**

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

**Journals:**

**Journal of Nutrition**
**-Journal of Animal Science**
**-Journal of Agriculture Science**
**-Nutrition Abstracts and Reviews**
**-Journal of Poultry Science**
**-Journal of small ruminant Nutrition**
**-Veterinary Record**
**-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** **Head of Department**

**Name: Dr. Asmaa S. A. Abdel-daim** **Prof. Dr. Elham Saleh**

**Sig. :**

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

| Topics | | Wk | Knowledge and Understanding | Intellectual Skills | Practical and Professional Skills | General & Transferable Skills |
|---|---|---|---|---|---|---|
| 1 | **Animal nutrition fundamentals**<br>**Composition of the animal body and its food** | 1,2 | **a1,a5** | **b3** | - | **d3** |
| 2 | **Feedstuffs**<br>**- Classification of feedstuffs** | 1 | **a2, a3** | - | **c2** | **d2** |
| 3 | **- Nutrition terms** | 2,3 | **a2, a3** | - | **c2** | **d2,d3** |
| 4 | **Water and its metabolism** | 3 | **a1,a5** | **b3** | - | **d3** |
| 5 | **Concentrates as energy sources & deleterious factors** | 4,5,6 | - | | **-c1,c2** | **d1, d2, d3** |
| 6 | **Carbohydrates and their metabolism** | 4 | **a1,a5** | **b3** | - | **d3** |
| 7 | **Proteins and their metabolism** | 5 | **a1,a5** | **b3** | - | **d3** |
| 8 | **Lipids and their metabolism.** | 6 | **a1,a5** | **b3** | - | **d3** |
| 9 | **Plant protein sources & deleterious factors** | 7,8,9 | - | - | **c1,c2** | **d1, d2, d3** |
| 10 | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | **a1, a3,a4,a5** | **b1,b2,b3** | - | **d1, d2, d3** |
| 11 | **-Forage and roughage** | 10,11,12,13 | **a2** | - | **c1,c2** | **d1, d2, d3** |
| 12 | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14,15 | **a1, a3,a4,a5** | **b1,b2,b3** | - | **d1, d2** |
| 13 | **-Feed processing and manufacture** | 14,15,16,17 | **a2** | - | **c1,c2** | **d1, d2, d3** |
| 14 | **Feed intake and factors affecting** | 16,17 | **a1, a2, a3,a4,a5** | **b1,b2,b3** | - | **d1, d2,d3** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| 15 | **Feedstuffs analyses<br>-Physical inspection** | 18,19,20 | | | **c1,c2** | **d1, d2** |
| 16 | **Digestion & absorption<br>Digestibility of feeds** | 18,19,20 | **a1, a5** | **b2,b3** | - | **d1, d2,d3** |
| 17 | **-Microscopical examination<br>-Chemical analyses<br>-Using standard feed analyses tables** | 21,22,23,24,25 | - | - | **c1,c2** | **d1,d2** |
| 18 | **Feeding standards and nutritional requirements for:<br>-maintenance<br>-growth<br>-fattening** | 21,22 | **a3,a4,a5** | **b2,b3** | - | **d1,d2.d3** |
| 19 | **-reproduction and lactation<br>-work production<br>-wool production** | 23,24,25 | **a3,a4,a5** | **b1,b2** | - | **d1, d3** |
| 20 | **Ration formulation methods** | 26 | - | - | **c1, c2** | - |
| 21 | **Feeding farm animals<br>-Feeding dairy cows and calves<br>-Feeding buffalos** | 26,27,28 | **a3,a4,a5** | **b1,b2,b3** | - | **d2, d3** |
| 10 | **Ration formulation of dairy cattle** | 27,28,29 | | | **c1, c2** | **d2, d3** |
| | **-Feeding sheep and goat<br>-Feeding camel** | 29,30,31 | **a3,a4,a5** | **b1,b2,b3** | | **d1,d2,d3** |
| 11 | **Ration formulation of sheep and goat<br>Ration formulation of camel** | 30,31 | | | **c1, c2** | **d2, d3** |
| | **-Feeding equine** | 32,33 | **a3,a4,a5** | **b1,b2,b3** | - | **d1,d2,d3** |
| | **Ration formulation of equine** | 32 | | | **c1, c2** | **d2, d3** |
| | **-Feeding poultry** | 34, 35 | **a3,a4,a5** | **b1,b2,b3** | | |
| | **Ration formulation for poultry** | 33,34 | | | **c1, c2** | **d2, d3** |
| | **Feed additives-<br>-Introduction** | | **a3,a4,a5** | **b1,b2,b3** | | **d1,d2,d3** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 36 | | | | |
| | **-Nutritional feed additives**<br>**-Non Nutritional feed additives** | 35,36 | | | **c1, c2** | **d2, d3** |
| **Graduate activity** | | **Along the course** | **a1, a2, a3, a4,a5** | **b1, b2, b3** | **C1,C2** | **d1, d2, d3** |

Beni-Suef University
Faculty of Veterinary Medicine

# Course specification of postgraduate

## 1-Basic information

| | |
|---|---|
| **Course Code:** | M-49 |
| **Course title :** | fundamentals of animal nutrition |
| **Program title:** | Master |
| **Contact hours/ week** | Lecture: 2 Practical: 2 Total: 4 |
| **Approval Date** | 9/9/2018 |

## 2-Professional information

**Overall aims of course**:

By the end of this course, the student is able to:
1-Apply the analytical and evaluating approaches to knowledge in diagnosis, prevention and control of nutritional disorders of animal and other related sciences.
2-Employ the acquired knowledge about nutritional requirements of animal together with other related topics in his/her professional practices.
3-Show awareness of current problems and recent theories in the field of nutritional problems of animal and Know the significance of different nutrients, different sources of essential nutrients and the drawbacks of their deficiency
4-Master different professional skills and techniques in diagnosis, prevention and control of nutritional deficiencies in animal.
5-Effectively communicate with others.
6- Formulating well balanced ration for poultry.
8-Effectively use and maintain the available facilities and resources.
10-Perform academic and professional self-development and continuous learning.

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

### a- Knowledge and understanding:

**By successful completion of the course, the student should be able to:**

a1. Recall information about nutritional requirements of animals and their calculation and interaction of nutrients.
a2. Define technical nutritional terms, feedstuffs and related parameters.
a3. Explain the principles and importance of high quality practices in development of animal feed industry.
a4. Recognize the mutual influence between different professional practices and their impacts on the environment.
a5. Identify the principals of application of different quality management systems in animal feeding sectors and practices to Know the significance of nutrients, different sources of essential nutrients and the drawbacks of their deficiency.

### B-Intellectual skills

**By successful completion of the course, the student should be able to:**

# Course specification of postgraduate

b1. Analyze and evaluate knowledge related to nutrients requirements of animals and interpret it to solve the related problems.
b2. Conduct a research study and/or write a scientific paper related to poultry sciences.
b3. Properly plan for performance enhancement in diagnosis, prevention and control of nutritional disorders of animals.

### C- Professional and practical skills

**By successful completion of the course, the student should be able to:**

c1. Master di erent conventional and advanced techniques in the field of feeding system and ration formulation.
c2. Write and evaluate reports related to animal nutrition and feeding.

### d- General and transferable skills

**By successful completion of the course, the student should be able to:**

d1. Communicate effectively using different means.
d2. Properly use the information technologies for development of his/her professional abilities.
d3. Use different facilities for gaining knowledge and information.

## 4-Topics and contents

| Course | Topic | Weeks | No. of hours | Lectures | Practical |
|---|---|---|---|---|---|
| (Lec. 2h./week, Pract 2h./week) | **Animal nutrition fundamentals Composition of the animal body and its food** | 1,2 | 6 | 6 | - |
| | **Feedstuffs - Classification of feedstuffs** | 1 | 2 | - | 2 |
| | **- Nutrition terms** | 2,3 | 4 | - | 4 |
| | **Water and its metabolism** | 3 | 2 | 2 | - |
| | **Concentrates as energy sources & deleterious factors** | 4,5,6 | 6 | - | 6 |
| | **Carbohydrates and their metabolism** | 4 | 2 | 2 | - |
| | **Proteins and their metabolism** | 5 | 2 | 2 | - |
| | **Lipids and their metabolism.** | 6 | 2 | 2 | - |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | **Plant protein sources & deleterious factors** | 7,8,9 | 6 | - | 6 |
| | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | 10 | 10 | - |
| | **-Forage and roughage** | 10,11,12 ,13 | 8 | - | 8 |
| | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14 ,15 | 8 | 8 | - |
| | **-Feed processing and manufacture** | 14,15,16 ,17 | 8 | - | 8 |
| | **Feed intake and factors affecting** | 16,17 | 4 | 4 | - |
| | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | 6 | - | 6 |
| | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | 6 | 6 | - |
| | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23 ,24,25 | 10 | - | 10 |
| | **Feeding standards and nutritional requirements for:**<br>**-maintenance**<br>**-growth**<br>**-fattening** | 21,22 | 4 | 4 | - |
| | **-reproduction and lactation**<br>**-work production**<br>**-wool production** | 23,24,25 | 6 | 6 | - |
| | **Ration formulation methods** | 26 | 2 | - | 2 |
| | **Feeding farm animals**<br>**-Feeding dairy cows and calves**<br>**-Feeding buffalos** | 26,27,28 | 6 | 6 | - |
| | **Ration formulation of dairy cattle** | 27,28,29 | 6 | - | 6 |
| | **-Feeding sheep and goat**<br>**-Feeding camel** | 29,30,31 | 6 | 6 | - |
| | **Ration formulation of sheep and goat**<br>**Ration formulation of camel** | 30,31 | 4 | - | 4 |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | **-Feeding equine** | 32,33 | 4 | 4 | - |
| | **Ration formulation of equine** | 32 | 2 | - | 2 |
| | **-Feeding poultry** | 34, 35 | 4 | 4 | - |
| | **Ration formulation for poultry** | 33,34 | 4 | - | 4 |
| | **Feed additives-**<br>**-Introduction** | 36 | 2 | 2 | - |
| | **-Nutritional feed additives**<br>**-Non Nutritional feed additives** | 35,36 | 4 | - | 4 |
| | Total | | 144 | 72 | 72 |

## 5-Teaching and learning methods

- **Lectures:**
  Depends on the sharing efforts of the students and supported with multimedia aids, discussion, brain storming.
- **Practical sections:**

- Identification of feedstuffs and their evaluation.
- Laboratory feed inspection and chemical analysis.
- Requirements calculation and ration formulation.

- **Self-learning:** Electronic learning, scientific search on related websites, international, national and local journals, and related books in faculty library.
- **Essays and reviews**
- **Discussion groups**

## 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** |
| Written Exam | **a1 to a5** | **b1 to b3** | | |
| Practical Exam | | | **c1 to c2** | |
| Oral Exam | **a1 to a5** | **b1 to b3** | **c1 to c2** | **d1 to d3** |

### 6.2. Assessment schedules

| **Method** | **Week(s)** |
|---|---|
| Written exam | **During December** |
| Practical exam | **During December** |

# Course specification of postgraduate

| | |
|---|---|
| Oral exam | **During December** |
| Student activiyies | **Along the year** |

**7.3. Weight of assessments**

| Assessment | Weight of assessment |
|---|---|
| Writing exam | **50%** |
| Practical exam | **25%** |
| Oral exam | **25%** |
| total | 100% |

## 7- List of references

**7.1. Notes and books**

**Textbook of Animal and Poultry Nutrition – part 1**

**Practical of feedstuffs and ration formulation – part 1**

**Textbook of Animal and Poultry Nutrition – part 2**

**Practical of feedstuffs and ration formulation – part 2**

**Textbook of Human Nutrition and Animal Byproducts.**

**7.2. Essential books:**

**1-Cheeke , P.R.(1991): Applied Animal Nutrition, Feeds and Feeding.**
**2- 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.**
**5-Pond, W. G., D.C. Church, and K .R. Pond (1995): Basic Animal Nutrition and Feeding, 4th edition.**

**7.3. Recommended texts**

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

**Journals:**

**Journal of Nutrition**
**-Journal of Animal Science**

# Course specification of postgraduate

**-Journal of Agriculture Science**
**-Nutrition Abstracts and Reviews**
**-Journal of Poultry Science**
**-Journal of small ruminant Nutrition**
**-Veterinary Record**
**-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** **Head of Department**

**Name: Dr. Asmaa S. A. Abdel-Daim** **Prof. Dr. Elham Saleh**

**Sig. :**

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

| Topics | | Wk | Knowledge and Understanding | Intellectual Skills | Practical and Professional Skills | General & Transferable Skills |
|---|---|---|---|---|---|---|
| 1 | **Animal nutrition fundamentals Composition of the animal body and its food** | 1,2 | **a1,a5** | **b3** | - | **d3** |
| 2 | **Feedstuffs**<br>**- Classification of feedstuffs** | 1 | **a2, a3** | - | **c2** | **d2** |
| 3 | **- Nutrition terms** | 2,3 | **a2, a3** | - | **c2** | **d2,d3** |
| 4 | **Water and its metabolism** | 3 | **a1,a5** | **b3** | - | **d3** |
| 5 | **Concentrates as energy sources & deleterious factors** | 4,5,6 | - | | **-c1,c2** | **d1, d2, d3** |
| 6 | **Carbohydrates and their metabolism** | 4 | **a1,a5** | **b3** | - | **d3** |
| 7 | **Proteins and their metabolism** | 5 | **a1,a5** | **b3** | - | **d3** |
| 8 | **Lipids and their metabolism.** | 6 | **a1,a5** | **b3** | - | **d3** |
| 9 | **Plant protein sources & deleterious factors** | 7,8,9 | - | - | **c1,c2** | **d1, d2, d3** |
| 10 | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | **a1, a3,a4,a5** | **b1,b2,b3** | - | **d1, d2, d3** |
| 11 | **-Forage and roughage** | 10,11,12,13 | **a2** | - | **c1,c2** | **d1, d2, d3** |
| 12 | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14,15 | **a1, a3,a4,a5** | **b1,b2,b3** | - | **d1, d2** |
| 13 | **-Feed processing and manufacture** | 14,15,16,17 | **a2** | - | **c1,c2** | **d1, d2, d3** |
| 14 | **Feed intake and factors affecting** | 16,17 | **a1, a2, a3,a4,a5** | **b1,b2,b3** | - | **d1, d2,d3** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| 15 | **Feedstuffs analyses<br>-Physical inspection** | 18,19,20 | | | **c1,c2** | **d1, d2** |
| 16 | **Digestion & absorption<br>Digestibility of feeds** | 18,19,20 | **a1, a5** | **b2,b3** | - | **d1, d2,d3** |
| 17 | **-Microscopical examination<br>-Chemical analyses<br>-Using standard feed analyses tables** | 21,22,23,24,25 | - | - | **c1,c2** | **d1,d2** |
| 18 | **Feeding standards and nutritional requirements for:<br>-maintenance<br>-growth<br>-fattening** | 21,22 | **a3,a4,a5** | **b2,b3** | - | **d1,d2.d3** |
| 19 | **-reproduction and lactation<br>-work production<br>-wool production** | 23,24,25 | **a3,a4,a5** | **b1,b2** | - | **d1, d3** |
| 20 | **Ration formulation methods** | 26 | - | - | **c1, c2** | - |
| 21 | **Feeding farm animals<br>-Feeding dairy cows and calves<br>-Feeding buffalos** | 26,27,28 | **a3,a4,a5** | **b1,b2,b3** | - | **d2, d3** |
| 10 | **Ration formulation of dairy cattle** | 27,28,29 | | | **c1, c2** | **d2, d3** |
| | **-Feeding sheep and goat<br>-Feeding camel** | 29,30,31 | **a3,a4,a5** | **b1,b2,b3** | | **d1,d2,d3** |
| 11 | **Ration formulation of sheep and goat<br>Ration formulation of camel** | 30,31 | | | **c1, c2** | **d2, d3** |
| | **-Feeding equine** | 32,33 | **a3,a4,a5** | **b1,b2,b3** | - | **d1,d2,d3** |
| | **Ration formulation of equine** | 32 | | | **c1, c2** | **d2, d3** |
| | **-Feeding poultry** | 34, 35 | **a3,a4,a5** | **b1,b2,b3** | | |
| | **Ration formulation for poultry** | 33,34 | | | **c1, c2** | **d2, d3** |
| | **Feed additives-<br>-Introduction** | | **a3,a4,a5** | **b1,b2,b3** | | **d1,d2,d3** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 36 | | | | |
| | **-Nutritional feed additives**<br>**-Non Nutritional feed additives** | 35,36 | | | **c1, c2** | **d2, d3** |
| **Graduate activity** | | **Along the course** | **a1, a2, a3, a4,a5** | **b1, b2, b3** | **C1,C2** | **d1, d2, d3** |

Beni-Suef University
Faculty of Veterinary Medicine

# Course specification of postgraduate

## 1-Basic information

| | |
|---|---|
| **Course Code:** | M-50 |
| **Course title :** | Feedstuffs |
| **Program title:** | Master |
| **Contact hours/ week** | Lecture: 2 Practical: 2 Total: 4 |
| **Approval Date** | ---9/2018 |

## 2-Professional information

**Overall aims of course**:

By the end of this course, the student be able to:
1-Apply the analytical and evaluating approaches to knowledge in identification, inspection and examination of feedstuffs and their use in rations.
2-Integrate the acquired knowledge about feedstuffs values in tables with the other related sciences and develop the relations in between.
3-Intensively aware of the current problems in feed industry and recent theories illustrating prevention and control of these problems.
4-Identify the practical problems facing feedstuffs industry and their solutions.
5-Develop new techniques and tools to be applied in feedstuffs evaluation and use.
6-Properly use the suitable technologies to serve of his/her professional practices.
7-Make decisions depending on the available data in different professional and practical contexts.
8-Properly employ the available resources and develop them and search for new ones.
9-Show awareness of his/her role in community development and environmental conservation in the area of feed industry in the light of global and regional variables.
10-Perform self-development and continuous learning and transfer the acquired knowledge and experience to others.

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

### a- Knowledge and understanding:

**By successful completion of the course, the student should be able to:**

a1. State information about feedstuffs identification and their suitability and use for animal feeding.
a2. Underline principles and morals of scientific research in the field of feed industry.
a3. Identify the legal and moral rules in different practices applied in analysis, inspection and feed evaluation.
a4. Recognize the principles and importance of high quality practices in development of feed industry.

### b-Intellectual skills

**By successful completion of the course, the student should be able to:**

# Course specification of postgraduate

b1. Analyze and evaluate knowledge related to feedstu s and interpret it to solve the related problems.
b2. Plane a good solve for field problems of feed industry affecting animal nutrition and economics using the available data.
b3. Illustrate different risk factors for each practice related to chemical analysis and feed manufacturing.
b4. Create properly plan for performance enhancement in feedstuffs classification and nomenclature.

### C- Professional and practical skills

**By successful completion of the course, the student should be able to:**

c1. Perform di erent conventional and advanced techniques in the field of feed analysis.
C2. Apply different available tools and methods regarding feedstuffs evaluation and ration formulation.

### d- General and transferable skills

**By successful completion of the course, the student should be able to:**

d1. Communicate effectively using different means.
d2. Properly use the information technologies for development of his/her professional abilities.
d3. Assess how to detect his/her learning requirements.
d4. Use different facilities for gaining knowledge and information.

## 4-Topics and contents

| Course | Topic | Weeks | No. of hours | Lectures | Practical |
|---|---|---|---|---|---|
| (Lec. 2h./week, Pract 2h./week) | **Animal nutrition fundamentals Composition of the animal body and its food** | 1,2 | 4 | 4 | - |
| | **Feedstuffs - Classification of feedstuffs** | 1 | 2 | - | 2 |
| | **- Nutrition terms** | 2,3 | 4 | - | 4 |
| | **Water and its metabolism** | 3 | 2 | 2 | - |
| | **Concentrates as energy sources & deleterious factors** | 4,5,6 | 6 | - | 6 |
| | **Carbohydrates and their metabolism** | 4 | 2 | 2 | - |
| | **Proteins and their metabolism** | 5 | 2 | 2 | - |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | **Lipids and their metabolism.** | 6 | 2 | 2 | - |
| | **Plant protein sources & deleterious factors** | 7,8,9 | 6 | - | 6 |
| | **Minerals**<br>**- Essential macroelements**<br>**- Essential microelements** | 7,8,9,10, 11 | 10 | 10 | - |
| | **-Forage and roughage** | 10,11,12 ,13 | 8 | - | 8 |
| | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14 ,15 | 8 | 8 | - |
| | **-Feed processing and manufacture** | 14,15,16 ,17 | 8 | - | 8 |
| | **Feed intake and factors affecting** | 16,17 | 4 | 4 | - |
| | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | 6 | - | 6 |
| | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | 6 | 6 | - |
| | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23 ,24,25 | 10 | - | 10 |
| | **Feeding standards and nutritional requirements for:** | 21,22 | 4 | 4 | - |
| | **- Animal feed safety and feed manufacturing**<br>**-Feed contaminants and its sources** | 23,24,25 | 6 | 6 | - |
| | **Environmental factors inducing feed deterioration** | 26 | 2 | - | 2 |
| | **-Mycotoxins and its importance**<br>**-Pesticides**<br>**-Heavy metals** | 26,27,28 | 6 | 6 | - |
| | **Feed manufacturing quality assurance and its monitoring** | 27,28,29 | 6 | - | 6 |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | **- Nanotechnology in feeds** | 29,30,31 | 6 | 6 | - |
| | **Feeding systems of farm animals** | 30,31 | 4 | - | 4 |
| | **-Feeds of large animals** | 32,33 | 4 | 4 | - |
| | **Feeds of poultry** | 32 | 2 | - | 2 |
| | **- Feeds of fish** | 34, 35 | 4 | 4 | - |
| | **Storage of feeds** | 33,34 | 4 | - | 4 |
| | **Feed additives-**<br>**-Introduction** | 36 | 2 | 2 | - |
| | **-Nutritional feed additives**<br>**-Non Nutritional feed additives** | 35,36 | 4 | - | 4 |
| | Total | | 144 | 72 | 72 |

## 5-Teaching and learning methods

- **Lectures:** depending on the sharing efforts of the students, discussion, brain storming and supported with multimedia aids.
- **Practical sections:** Laboratory
- **Self-learning:** Electronic learning, Seminars, scientific search on related websites, international, national and local journals, related books in faculty library.
- **Essays and reviews**
- **Discussion groups**

## 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** |
| Written Exam | **a1 to a5** | **b1 to b3** | | |
| Practical Exam | | | **c1 to c2** | |
| Oral Exam | **a1 to a5** | **b1 to b3** | **c1 to c2** | **d1 to d3** |
| Oral Exam | **a1 to a4** | **b1 to b4** | **c1 to c2** | **d1 to d4** |

### 6.2. Assessment schedules

| **Method** | **Week(s)** |
|---|---|
| Written exam | **During December** |

# Course specification of postgraduate

| | |
|---|---|
| Practical exam | **During December** |
| Oral exam | **During December** |
| Student activities | **Along the year** |

**6.3. Weight of assessments**

| Assessment | Weight of assessment |
|---|---|
| Writing exam | **50%** |
| Practical exam | **25%** |
| Oral exam | **25%** |
| total | 100% |

## 7- List of references

**7.1. Notes and books**

**1-Textbook of Animal and Poultry Nutrition – part 1**

**2-Practical of feedstuffs and ration formulation – part 1**

**3-Textbook of Animal and Poultry Nutrition – part 2**

**4-Practical of feedstuffs and ration formulation – part 2**

**5-Textbook of Human Nutrition and Animal Byproducts.**

**7.2. Essential books:**

**1-Cheeke , P.R.(1991): Applied Animal Nutrition, Feeds and Feeding.**
**2- 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.**
**5-Pond, W. G., D.C. Church, and K .R. Pond (1995): Basic Animal Nutrition and Feeding, 4th edition.**

**7.3. Recommended texts**

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

**Journals:**

**Journal of Nutrition**

# Course specification of postgraduate

**-Journal of Animal Science**
**-Journal of Agriculture Science**
**-Nutrition Abstracts and Reviews**
**-Journal of Poultry Science**
**-Journal of small ruminant Nutrition**
**-Veterinary Record**
**-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**

**Name: Dr. Asmaa Salah** **Prof. Dr. Elham Saleh**

**Sig. :**

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

| Topics | | Week | Knowledge and Understanding | Intellectual Skills | Practical and Professional Skills | General & Transferable Skills |
|---|---|---|---|---|---|---|
| 1 | **Animal nutrition fundamentals**<br>**Composition of the animal body and its food** | 1,2 | **a1, a2** | **b1,b2,b3,b4** | - | **d1, d2** |
| 2 | **Feedstuffs**<br>**- Classification of feedstuffs** | 1 | - | **b1,b2,b3** | - | **d1, d2** |
| 3 | **- Nutrition terms** | 2,3 | **a1, a2, a3** | **b1,b2,b3** | - | **d1, d2** |
| 4 | **Water and its metabolism** | 3 | **a1, a2** | **b1,b2,b3** | - | **d1, d2** |
| 5 | **Concentrates as energy sources & deleterious factors** | 4,5,6 | - | **b1,b2,b3** | - | **d1, d2** |
| 6 | **Carbohydrates and their metabolism** | 4 | **a1, a2** | **b1,b2,b3** | - | **d1, d2** |
| 7 | **Proteins and their metabolism** | 5 | **a1, a2** | **b1,b2,b3** | - | **d1, d2** |
| 8 | **Lipids and their metabolism.** | 6 | **a1, a2** | **b1,b2,b3** | - | **d1, d2** |
| 9 | **Plant protein sources & deleterious factors** | 7,8,9 | - | **b1,b2,b3** | - | **d1, d2, d3** |
| 10 | **Minerals**<br>**- Essential macroelements**<br>**- Essential microelements** | 7,8,9,10, 11 | **a1, a2** | **b1,b2,b3** | - | **d1, d2, d3** |
| 11 | **-Forage and roughage** | 10,11,12,13 | **a1, a2, a3** | **b1,b2,b3** | - | **d1, d2** |
| 12 | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14,15 | **a1, a2** | **b1,b2,b3** | - | **d1, d2** |
| 13 | **-Feed processing and manufacture** | 14,15,16,17 | **a1, a2, a3** | **b1,b2,b3** | - | **d1, d2** |
| 14 | **Feed intake and factors affecting** | 16,17 | **a1, a2** | **b1,b2,b3** | - | **d1, d2** |
| 15 | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | - | **b1,b2,b3,b4** | **c1, c2** | **d1, d2** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| 16 | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | **a1, a2** | **b2,b3,b4** | - | **d3, d4** |
| 17 | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23,24,25 | | **b1,b2,b3,b4** | **c1, c2** | **d3, d4** |
| 18 | **Feeding standards and nutritional requirements** | 21,22 | **a1,a2,a4** | **b4** | - | **d3, d4** |
| 19 | **- Animal feed safety and feed manufacturing**<br>**-Feed contaminants and its sources** | 23,24,25 | **a1,a2,a3,a4** | **b3,b4** | - | **d3, d4** |
| 20 | **Environmental factors inducing feed deterioration** | 26 | **a1,a2,a3,a4** | **b1,b2,b4** | - | **d2, d4** |
| 21 | **-Mycotoxins and its importance**<br>**-Pesticides**<br>**-Heavy metals** | 26,27,28 | **a1,a2,a3,a4** | **b1,b2,b3,b4** | - | **d2, d4** |
| 22 | **Feed manufacturing quality assurance and its monitoring** | 27,28,29 | **a1,a2,a3,a4** | **b1,b2,b3,b4** | - | **d2, d4** |
| 23 | **- Nanotechnology in feeds** | 29,30,31 | **a1,a2,a3,a4** | **b1,b2,b3,b4** | - | **d2, d4** |
| 24 | **Feeding systems of farm animals** | 30,31 | **a1,a2,a3,a4** | **b1** | -- | **d2, d4** |
| 25 | **-Feeds of large animals** | 32,33 | **a1,a2,a3,a4** | **b1,b2,b4** | - | **d2, d4** |
| 26 | **Feeds of poultry** | 32 | **a1,a2,a3,a4** | **b1,b2,b4** | - | **d2, d4** |
| 27 | **- Feeds of fish** | 34, 35 | **a1,a2,a3,a4** | **b1,b2** | - | **d2, d4** |
| 28 | **Storage of feeds** | 33,34 | **a1,a2,a3,a4** | | - | **d1,d2,d3,d4** |
| 29 | **Feed additives-**<br>**-Introduction** | 36 | **a1,a2** | **b1,b2** | - | **d1,d2,d3,d4** |
| 30 | **-Nutritional feed additives**<br>**-Non Nutritional feed additives** | 35,36 | - | - | **c1,c2** | **d1,d2,d3** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| **Student activity** | | **Along the course** | **a1, a2, a3, a4** | **b1, b2, b3,b4** | **c2,c2** | **d1, d2, d3, d4** |

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

## 1-Basic information

| | |
|---|---|
| **Course Code:** | M-51 |
| **Course title :** | **Feeding farm animals and fish** |
| **Program title:** | Master |
| **Contact hours/ week** | Lecture: 2 Practical: 2 Total: 4 |
| **Approval Date** | 9/9/2018 |

## 2-Professional information

**Overall aims of course**:

By the end of this course, the student be able to:
1-Apply the analytical and evaluating approaches to knowledge in nutrients metabolism and nutritional disorder of animals and other related sciences.
2- Illustrating diagnosis, prevention and control of nutritional problems of animals and fish.
3-Identify the practical problems facing animal and fish farming and their solutions.
4-Master wide range of professional skills and techniques diagnosis of nutritional disorder of animals and fish.
5-Properly use the suitable technologies to serve of his/her professional practices.
6-Make decisions depending on the available data in different professional and practical contexts.
7-Properly employ the available resources and develop them and search for new ones.
8-Show awareness of his/her role in community development and environmental conservation in the area of nutritional requirements in the light of global and regional variables.
9-Perform self-development and continuous learning and transfer the acquired knowledge and experience to others.

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

**a- Knowledge and understanding:**
**By successful completion of the course, the student should be able to:**

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

a1. Recall information and knowledge in the field of nutritional requirements of animal and related sciences.
a2. Underline principles and morals of scientific research in the field of nutritional disorders of animal and fish.
a3. Identify the legal and moral rules in different practices applied in diagnostic, preventive and control of nutritional problems of animal and fish.
a4. Recognize the mutual influence between different professional practices and their impacts on the environment.
a5. Identify the principals of application of different quality management systems in rabbit raising sectors and practices.

**b-Intellectual skills**

**By successful completion of the course, the student should be able to:**

b1. Analyze and evaluate knowledge related to nutritional requirements of animals and interpret it to solve the related problems.
b2. Interpret field problems of nutritional origin affecting animals and fish husbandry and economics using the available data.
b3. Create research studies that add new knowledge to the area of nutritional disorders of animals.
b4. Assemble different nutritional factors for each practice related to digestibility, deficiencies and balanced ration formulation.

**C- Professional and practical skills**

**By successful completion of the course, the student should be able to:**

c1. Perform di erent conventional and advanced techniques in the field of nutritional requirements of animals and fish.
c2. Write and evaluate reports related to diagnosis of field cases of nutritional origin.
c3. Assess different available tools and methods regarding diagnosis, prevention and control of nutritional problems of animals.

**d- General and transferable skills**

**By successful completion of the course, the student should be able to:**

d1. Communicate e ectively using di erent means.
d2. Properly use the information technologies for development of his/her professional abilities.
d3. Perform self-development and continuous learning and transfer the acquired knowledge and experience to others.
d4. Assess him/her and learn how to detect his/her learning requirements.
d5. Use different facilities for gaining knowledge and information.

# Course specification

## 4-Topics and contents

| Course | Topic | Weeks | No. of hours | Lectures | Practical |
|---|---|---|---|---|---|
| (Lec. 2h./week, Pract 2h./week) | **Animal nutrition fundamentals<br>Composition of the animal body and its food** | 1,2 | 6 | 6 | - |
| | **Feedstuffs<br>- Classification of feedstuffs** | 1 | 2 | - | 2 |
| | **- Nutrition terms** | 2,3 | 4 | - | 4 |
| | **Water and its metabolism** | 3 | 2 | 2 | - |
| | **Concentrates as energy sources & deleterious factors** | 4,5,6 | 6 | - | 6 |
| | **Carbohydrates and their metabolism** | 4 | 2 | 2 | - |
| | **Proteins and their metabolism** | 5 | 2 | 2 | - |
| | **Lipids and their metabolism.** | 6 | 2 | 2 | - |
| | **Plant protein sources & deleterious factors** | 7,8,9 | 6 | - | 6 |
| | **Minerals- macro & microelements<br>- Introduction, distribution, functions<br>- Deficiencies, supplements** | 7,8,9,10, 11 | 10 | 10 | - |

# Course specification

| | | | | | |
|---|---|---|---|---|---|
| | **-Forage and roughage** | 10,11,12 ,13 | 8 | - | 8 |
| | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14 ,15 | 8 | 8 | - |
| | **-Feed processing and manufacture** | 14,15,16 ,17 | 8 | - | 8 |
| | **Feed intake and factors affecting** | 16,17 | 4 | 4 | - |
| | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | 6 | - | 6 |
| | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | 6 | 6 | - |
| | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23 ,24,25 | 10 | - | 10 |
| | **Feeding standards and nutritional requirements for:**<br>**-maintenance**<br>**-growth**<br>**-fattening** | 21,22 | 4 | 4 | - |
| | **-reproduction and lactation**<br>**-work production**<br>**-wool production** | 23,24 | 6 | 6 | - |

# Course specification

| | | | | | |
|---|---|---|---|---|---|
| | **Ration formulation methods** | 25 | 2 | - | 2 |
| | **Feeding fish** | 26 | 2 | 2 | - |
| | **Ration formulation of fish** | 27 | 2 | - | 2 |
| | **Feeding farm animals**<br>**-Feeding dairy cows and calves**<br>**-Feeding buffalos** | 26,27,28 | 6 | 6 | - |
| | **Ration formulation of dairy cattle** | 28,29 | 6 | - | 6 |
| | **-Feeding sheep and goat**<br>**-Feeding camel** | 29,30,31 | 6 | 6 | - |
| | **Ration formulation of sheep and goat**<br>**Ration formulation of camel** | 30,31 | 4 | - | 4 |
| | **-Feeding equine** | 32,33 | 4 | 4 | - |
| | **Ration formulation of equine** | 32 | 2 | - | 2 |
| | **-Feeding poultry** | 34, 35 | 4 | 4 | - |
| | **Ration formulation for poultry** | 33,34 | 4 | - | 4 |
| | **Feed additives-** | 36 | 2 | 2 | - |
| | **Environmental factors inducing feed deterioration**<br>**-Mycotoxins and its importance** | 35 | 2 | - | 2 |

# Course specification

| | | | | | |
|---|---|---|---|---|---|
| | **-Pesticides** | | | | |
| | **-Heavy metals**<br>**-Feed manufacturing quality assurance and its monitoring** | 36 | 2 | - | 2 |
| | Total | | 144 | 72 | 72 |

## 5-Teaching and learning methods

- **Lectures:**

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

- **Practical sections:**

- Identification of feedstuffs and their evaluation.
- Laboratory feed inspection and chemical analysis.
- Requirements calculation and ration formulation.

- **Self learning**: Electronic learning, Seminars, scientific search on related websites, international, national and local journals, related books in faculty library.
- **Essays and reviews**
- **Discussion groups**

## 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** |
| Written Exam | **a1 to a5** | **b1 to b4** | | |
| Practical Exam | | | **c1 to c2** | |
| Oral Exam | **a1 to a5** | **b1 to b4** | **c1 to c2** | **d1 to d3** |

# Course specification

**6.2. Assessment schedules**

| Method | Week(s) |
|---|---|
| Written exam | **During December** |
| Practical exam | **During December** |
| Oral exam | **During December** |
| Student activities | **Along the year** |

**6.3. Weight of assessments**

| Assessment | Weight of assessment |
|---|---|
| Writing exam | **50%** |
| Practical exam | **25%** |
| Oral exam | **25%** |
| total | 100% |

## 7- List of references

**7.1. Notes and books**

**1-Textbook of Animal and Poultry Nutrition – part 1**

**2-Practical of feedstuffs and ration formulation – part 1**

**3-Textbook of Animal and Poultry Nutrition – part 2**

**4-Practical of feedstuffs and ration formulation – part 2**

**5-Textbook of Human Nutrition and Animal Byproducts.**

# Course specification

**7.2. Essential books:**

**1-Cheeke , P.R.(1991): Applied Animal Nutrition, Feeds and Feeding.**
**2- 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.**
**5-Pond, W. G., D.C. Church, and K .R. Pond (1995): Basic Animal Nutrition and Feeding, 4th edition.**

**7.3. Recommended texts**

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

**Journals:**

**Journal of Nutrition**
**-Journal of Animal Science**
**-Journal of Agriculture Science**
**-Nutrition Abstracts and Reviews**
**-Journal of Poultry Science**
**-Journal of small ruminant Nutrition**
**-Veterinary Record**
**-Journal of Dairy Science**

**Websites:**

**www.google.com**
**-www. FAO**

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

www.Sciencedirect.com

- **www. Net veterinary resources- Agricultural sites**
- **www. Veterinary and agricultural web resources, livestock and poultry**

**Course Coordinators** **Head of Department**

**Name: Dr. Asmaa S. A. Abdel-Daim** **Prof. Dr. Elham Saleh**

**Sig. :**

| Topics | | Wk. | Knowledge and Understanding | Intellectual Skills | Practical and Professional Skills | General & Transferable Skills |
|---|---|---|---|---|---|---|
| 1 | **Animal nutrition fundamentals**<br>**Composition of the animal body and its food** | 1,2 | **a1,a3** | **b2,b4** | - | **d2,d3,d5** |
| 2 | **Feedstuffs** | | - | - | **c1,c2,c3** | **d3** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| | **- Classification of feedstuffs** | 1 | | | | |
| 3 | **- Nutrition terms** | 2,3 | - | - | **c2** | **d1,d2.d3,d4,d5** |
| 4 | **Water and its metabolism** | 3 | - | **b2,b4** | - | **d1, d2** |
| 5 | **Concentrates as energy sources & deleterious factors** | 4,5,6 | - | - | **c1,c2.c3** | **d1,d2.d3,d4,d5** |
| 6 | **Carbohydrates and their metabolism** | 4 | **a1, a3** | **b2,b4** | - | **d1, d2** |
| 7 | **Proteins and their metabolism** | 5 | **a1,a3** | **b2,b4** | - | **d1, d2** |
| 8 | **Lipids and their metabolism.** | 6 | **a1, a3** | **b2,b4** | - | **d1, d2** |
| 9 | **Plant protein sources & deleterious factors** | 7,8,9 | - | - | **c1,c2.c3** | **d1,d2.d3,d4,d5** |
| 10 | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | **a1,a2,a3,a4,a5** | **b1,b2,b3,b4** | - | **d3, d4, d5** |
| 11 | **-Forage and roughage** | 10,11,12,13 | | - | **c1,c2.c3** | **d3, d4, d5** |
| 12 | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14,15 | **a1,a2,a3,a4,a5** | **b1,b2,b3,b4** | - | **d1,d2.d3,d4,d5** |
| 13 | **-Feed processing and manufacture** | 14,15,16,17 | - | - | **c1, c2, c3** | **d3, d4, d5** |
| 14 | **Feed intake and factors affecting** | 16,17 | **a1,a3,a4,a5** | **b2,b4** | - | **d2, d4, d5** |
| 15 | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | - | - | **c1, c2, c3** | **d1,d2.d3,d4,d5** |
| 16 | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | **a1,a2,a3,a4,a5** | **b b1,b2,b3,b4** | - | **d2, d4, d5** |
| 17 | **-Microscopical examination** | 21,22,23,24,25 | - | - | **c1, c2, c3** | **d2, d4, d5** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| | **-Chemical analyses**<br>**-Using standard feed analyses tables** | | | | | |
| 18 | **Feeding standards and nutritional requirements for:**<br>**-maintenance**<br>**-growth**<br>**-fattening** | 21,22 | **a1,a2,a3** | **b2,b4** | - | **d2, d4, d5** |
| 19 | **-reproduction and lactation**<br>**-work production**<br>**-wool production** | 23,24 | **a1,a2,a3** | **b2,b4** | - | **d2, d4, d5** |
| 20 | **Ration formulation methods** | 25 | - | - | **c1, c2, c3** | **d2, d4, d5** |
| 21 | **Feeding fish** | 26 | **a1,a2,a3,a4,a5** | **b1,b2,b3,b4** | | **d1,d2.d3,d4,d5** |
| 22 | **Ration formulation of fish** | 27 | | - | **c1, c2, c3** | **d2, d4, d5** |
| 23 | **Feeding farm animals**<br>**-Feeding dairy cows and calves**<br>**-Feeding buffalos** | 26,27,28 | **a1,a2,a3,a4,a5** | **b1,b2,b3,b4** | | **d1,d2.d3,d4,d5** |
| | **Ration formulation of dairy cattle** | 28,29 | - | - | **c1,c2.c3** | **d3,d4,d5** |
| | **-Feeding sheep and goat**<br>**-Feeding camel** | 29,30,31 | **a1,a2,a3,a4,a5** | **b1,b2,b3,b4** | - | **d1,d2.d3,d4,d5** |
| | **Ration formulation of sheep and goat**<br>**Ration formulation of camel** | 30,31 | - | | **c1,c2.c3** | **d1,d2,d3,d4** |
| | **-Feeding equine** | 32,33 | **a1,a2,a3,a4,a5** | **b1,b2,b3,b4** | - | **d1,d2.d3,d4,d5** |
| | **Ration formulation of equine** | 32 | - | - | **c1,c2.c3** | **d1,d2,d3,d4** |
| | **-Feeding poultry** | 34, 35 | **a1,a2,a3,a4,a5** | **b1,b2,b3,b4** | - | **d1,d2,d3,d4,d5** |
| | **Ration formulation for poultry** | 33,34 | - | - | **c1,c2.c3** | **d1,d2,d3,d4** |
| | **Feed additives-** | | **a1,a2,a3** | **b1,b2,b3** | - | **d1,d2** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 36 | | | | |
| | **Environmental factors inducing feed deterioration**<br>**-Mycotoxins and its importance**<br>**-Pesticides** | 35 | - | | **c1,c2.c3** | **d1,d2,d3,d4** |
| | **-Heavy metals**<br>**-Feed manufacturing quality assurance and its monitoring** | 36 | - | | **c1,c2.c3** | **d1,d2,d3,d4** |
| **Student activity** | | **Along the course** | **a1,a2,a3,a4,a5** | **b1, b2, b3,b4** | **c1,c2.c3** | **d1,d2,d3,d4** |

Beni-Suef University
Faculty of Veterinary Medicine

# Course specification of postgraduate

## 1-Basic information

| | |
|---|---|
| **Course Code:** | M-52 |
| **Course title :** | **Poultry and rabbit Nutrition** |
| **Program title:** | Master |
| **Contact hours/ week** | Lecture: 2 Practical: 2 Total: 4 |
| **Approval Date** | 9/9/2018 |

## 2-Professional information

**Overall aims of course**:

By the end of this course, the student is able to:
1-Acquire knowledge and skills about all essential nutrients and their metabolism and deficiencies in poultry and rabbits
2-Apply the analytical and evaluating approaches to knowledge in diagnosis, prevention and control of nutritional disorders of rabbit and poultry.
3-Intensively aware of the nutritional requirements and how to formulate rations for feeding poultry using feedstuffs which are identified evaluated and can be analyzed.
4-Identify the practical problems facing poultry industry and their solutions.
5-Master wide range of professional skills and techniques diagnosis of different poultry and rabbit disorders.
6-Properly use the suitable technologies to serve of his/her professional practices.
7-Make decisions depending on the available data in different professional and practical contexts.
8-Properly employ the available resources and develop them and search for new ones.
9-Show awareness of his/her role in community development and environmental conservation in the area of different rabbit diseases.in the light of global and regional variables.
10-Perform self-development and continuous learning and transfer the acquired knowledge and experience to others.

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

### a- Knowledge and understanding:

**By successful completion of the course, the student should be able to:**

a1. Define recent theories and knowledge in the field of poultry and rabbit nutrition and related sciences.
a2. Underline principles and morals of scientific research in the field of different poultry and rabbit nutritional requirements.
a3. Identify the technical terms related to poultry & rabbit nutrition and feeding.
a4. Recognize the essentiality of all nutrients and importance of poultry nutrition.
a5. Recognize the mutual influence between different professional practices and their impacts on the environment.

# Course specification of postgraduate

a6. Identify the principals of application of di erent quality management systems in rabbit raising sectors and practices.

### b-Intellectual skills

**By successful completion of the course, the student should be able to:**

b1. Analyze and evaluate knowledge related to different poultry and rabbit disorders and interpret it to solve the related problems.
b2. Set up Solution field problems of different poultry and rabbit nutrition, husbandry and economics using the available data.
b3. Create research studies that add new knowledge to the area of bacterial, viral, parasitic, nutritional and mycotic diseases of rabbit.
b4. Demonstrate all essential nutrients, nutritional requirements, feeding systems and high quality ration formulation.
b5. Design plan for performance enhancement in interpretation of different data shown in the nutritional requirements tables.

### C- Professional and practical skills

**By successful completion of the course, the student should be able to:**

c1. Perfectly perform di erent conventional and advanced techniques in the eld of nutritional requirements of poultry and rabbit.
c2. Write and evaluate reports related to diagnosis of field cases of nutritional origin.
c3. Assess different available tools and methods regarding diagnosis, prevention and control of different nutritional disorders.

### d- General and transferable skills

**By successful completion of the course, the student should be able to:**

d1. Properly use the information technologies for development of his/her professional abilities.
d2. Perform self-development and continuous learning and transfer the acquired knowledge and experience to others.
d3. Assess him/her and learn how to detect his/her learning requirements.
d4. Carry out rules and indicators for evaluation of the performance of others.
d5. Use different facilities for gaining knowledge and information.

Beni-Suef University
Faculty of Veterinary Medicine

# Course specification of postgraduate

## 4-Topics and contents

| Course | Topic | Weeks | No. of hours | Lectures | Practical |
|---|---|---|---|---|---|
| (Lec. 2h./week, Pract 2h./week) | **Animal nutrition fundamentals**<br>**Composition of the animal body and its food** | 1,2 | 6 | 6 | - |
| | **Feedstuffs**<br>**- Classification of feedstuffs** | 1 | 2 | - | 2 |
| | **- Nutrition terms** | 2,3 | 4 | - | 4 |
| | **Water and its metabolism** | 3 | 2 | 2 | - |
| | **Concentrates as energy sources & deleterious factors** | 4,5,6 | 6 | - | 6 |
| | **Carbohydrates and their metabolism** | 4 | 2 | 2 | - |
| | **Proteins and their metabolism** | 5 | 2 | 2 | - |
| | **Lipids and their metabolism.** | 6 | 2 | 2 | - |
| | **Plant protein sources & deleterious factors** | 7,8,9 | 6 | - | 6 |
| | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | 10 | 10 | - |
| | **-Forage and roughage** | 10,11,12 ,13 | 8 | - | 8 |
| | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14 ,15 | 8 | 8 | - |
| | **-Feed processing and manufacture** | 14,15,16 ,17 | 8 | - | 8 |
| | **Feed intake and factors affecting** | 16,17 | 4 | 4 | - |
| | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | 6 | - | 6 |
| | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | 6 | 6 | - |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | **-Microscopical examination<br>-Chemical analyses<br>-Using standard feed analyses tables** | 21,22,23 ,24,25 | 10 | - | 10 |
| | **Feeding standards and nutritional requirements for:<br>-maintenance<br>-growth<br>-fattening** | 21,22 | 4 | 4 | - |
| | **-Reproduction and egg production<br>-Fur production** | 25,26 | 4 | - | 4 |
| | **Feeding poultry<br>-Feeding broilers** | 27,28 | 4 | 4 | - |
| | **-Feeding layers<br>-Feeding water fowls** | 29,30 | 4 | 4 | 2 |
| | **Feeding Turkey** | 31,32 | 4 | 4 | - |
| | **Feeding pigeon** | 33,34 | 4 | 4 | - |
| | **Feeding rabbit** | 35 | 4 | 4 | - |
| | **Ration formulation for poultry and rabbit** | 28,29,30 | 4 | - | 4 |
| | **Feed additives-<br>-Introduction** | 36 | 2 | 2 | - |
| | **-Nutritional feed additives<br>-Non Nutritional feed additives<br>- Nanoparticles feed additives** | 31,32 | **4** | **-** | 4 |
| | **Environmental factors inducing feed deterioration<br>-Mycotoxins and its importance<br>-Pesticides** | 33,34 | 4 | - | 4 |
| | **-Heavy metals<br>-Feed manufacturing quality assurance and its monitoring** | 35,36 | 4 | - | 4 |
| | Total | | 144 | 72 | 72 |

## 5-Teaching and learning methods

- **Lectures:**

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

- **Practical sections:**

- Identification of feedstuffs and their evaluation.

# Course specification of postgraduate

- Laboratory feed inspection and chemical analysis.
- Requirements calculation and ration formulation.

• **Self learning**: Electronic learning, Seminars, scientific search on related websites, international, national and local journals, related books in faculty library.

• **Essays and reviews**

• **Discussion groups**

## 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 |
| Written Exam | a1 to a6 | b1 to b5 | | |
| Practical Exam | | | c1 to c3 | |
| Oral Exam | a1 to a6 | b1 to b5 | c1 to c3 | d1 to d5 |

**6.2. Assessment schedules**

| Method | Week(s) |
|---|---|
| Written exam | During December |
| Practical exam | During December |
| Oral exam | During December |
| Student activities | Along the year |

**6.3. Weight of assessments**

| Assessment | Weight of assessment |
|---|---|
| Writing exam | 50% |
| Practical exam | 25% |
| Oral exam | 25% |
| total | 100% |

## 7- List of references

**7.1. Notes and books**

**1-Textbook of Animal and Poultry Nutrition – part 1**

**2-Practical of feedstuffs and ration formulation – part 1**

**3-Textbook of Animal and Poultry Nutrition – part 2**

**4-Practical of feedstuffs and ration formulation – part 2**

**5-Textbook of Human Nutrition and Animal Byproducts.**

# Course specification of postgraduate

**7.2. Essential books:**

**1-Cheeke , P.R.(1991): Applied Animal Nutrition, Feeds and Feeding.**
**2- 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.**
**5-Pond, W. G., D.C. Church, and K .R. Pond (1995): Basic Animal Nutrition and Feeding, 4th edition.**

**7.3. Recommended texts**

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

**Journals:**

**Journal of Nutrition**
**-Journal of Animal Science**
**-Journal of Agriculture Science**
**-Nutrition Abstracts and Reviews**
**-Journal of Poultry Science**
**-Journal of small ruminant Nutrition**
**-Veterinary Record**
**-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** **Head of Department**

**Name: Dr. Asmaa Salah Awad** **Prof. Dr. Elham Saleh**

**Sig. :**

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

| Topics | | Wk | Knowledge and Understanding | Intellectual Skills | Practical and Professional Skills | General & Transferable Skills |
|---|---|---|---|---|---|---|
| 1 | **Animal nutrition fundamentals**<br>**Composition of the animal body and its food** | 1,2 | **a1,a2,a4** | **b1,b4** | - | **d1, d2,d5** |
| 2 | **Feedstuffs**<br>**- Classification of feedstuffs** | 1 | - | - | **c1,c2** | **d1, d2,d3** |
| 3 | **- Nutrition terms** | 2,3 | - | - | **c1,c2** | **d1, d2** |
| 4 | **Water and its metabolism** | 3 | **a1,a2,a4** | **b1,b4** | - | **d1, d2** |
| 5 | **Concentrates as energy sources & deleterious factors** | 4,5,6 | - | - | **c1,c2,c3** | **d1, d2** |
| 6 | **Carbohydrates and their metabolism** | 4 | **a1,a2,a4** | **b1,b4** | - | **d1, d2** |
| 7 | **Proteins and their metabolism** | 5 | **a1,a2, a4** | **b1,b4** | - | **d1, d2** |
| 8 | **Lipids and their metabolism.** | 6 | **a1,a2,a4** | **b1,b4** | - | **d3, d4, d5** |
| 9 | **Plant protein sources & deleterious factors** | 7,8,9 | - | - | **c1,c2,c3** | **d1, d2** |
| 10 | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | **a1,a2, a4** | **b1,b4** | - | **d3, d4, d5** |
| 11 | **-Forage and roughage** | 10,11,12,13 | - | - | **c1, c2, c3** | **d2, d4, d5** |
| 12 | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14,15 | **a1,a2, a4** | **b1,b4** | | **d2, d4, d5** |
| 13 | **-Feed processing and manufacture** | 14,15,16,17 | - | - | **c1, c3** | **d2, d4, d5** |
| 14 | **Feed intake and factors affecting** | 16,17 | **a1,a2,a3,a4,a5,a6** | **b1,b2,b3,b4,b5** | | **d2, d4, d5** |
| 15 | **Feedstuffs analyses** | 18,19,20 | - | - | **c1, c2, c3** | **d2, d4, d5** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| | **-Physical inspection** | | | | | |
| 16 | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | **a1,a2,a3,a4,a5,a6** | **b1,b2,b3,b4,b5** | | **d2, d4, d5** |
| 17 | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23,24,25 | - | - | **c1, c2, c3** | **d2, d4, d5** |
| 18 | **Feeding standards and nutritional requirements for:**<br>**-maintenance**<br>**-growth**<br>**-fattening** | 21,22 | **a1,a2,a3,a4,a5,a6** | **b1,b2,b3,b4,b5** | - | **d2, d4, d5** |
| 19 | **-Reproduction and egg production**<br>**-Fur production** | 25,26 | **a1,a2,a3,a4,a5,a6** | **b1,b2,b3,b4,b5** | - | **d2, d4, d5** |
| 20 | **Feeding poultry**<br>**-Feeding broilers** | 27,28 | **a1,a2,a3,a4,a5,a6** | **b1,b2,b3,b4,b5** | - | **d2, d4, d5** |
| 21 | **-Feeding layers**<br>**-Feeding water fowls** | 29,30 | **a1,a2,a3,a4,a5,a6** | **b1,b2,b3,b4,b5** | - | **d2, d4, d5** |
| 22 | **Feeding Turkey** | 31,32 | **a1,a2,a3,a4,a5,a6** | **b1,b2,b3,b4,b5** | - | **d2, d4, d5** |
| 23 | **Feeding pigeon** | 33,34 | **a1,a2,a3,a4,a5,a6** | **b1,b2,b3,b4,b5** | - | **d2, d4, d5** |
| | **Feeding rabbit** | 35 | **a1,a2,a3,a4,a5,a6** | **b1,b2,b3,b4,b5** | - | **d1,d2,d3,d4,d5** |
| | **Ration formulation for poultry and rabbit** | 28,29,30 | - | - | **c1,c2,c3** | **d1,d2,d3,d4,d5** |
| | **Feed additives-**<br>**-Introduction** | 36 | **a1,a2,a3,a4,a5,a6** | **b1,b2,b3,b4,b5** | | **d1,d2,d3,d4,d5** |
| | **-Nutritional feed additives**<br>**-Non Nutritional feed additives**<br>**- Nanoparticles feed additives** | 31,32 | - | - | **c1,c2,c3** | **d1,d2,d3,d4,d5** |
| | **Environmental factors inducing feed deterioration** | | - | - | | **d1,d2,d3,d4,d5** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| | **-Mycotoxins and its importance**<br>**-Pesticides** | 33,34 | | | **c1,c2,c3** | |
| | **-Heavy metals**<br>**-Feed manufacturing quality assurance and its monitoring** | 35,36 | - | - | **c1,c2,c3** | **d1,d2,d3,d4,d5** |
| **Student activity** | | **Along the course** | **a1,a2,a3,a4,a5,a6** | **b1,b2,b3,b4,b5** | **c1,c2,c3** | **d1, d2, d3, d4,d5** |

Beni-Suef University
Faculty of Veterinary Medicine

# Course specification of postgraduate

## 1-Basic information

| | |
|---|---|
| **Course Code:** | M-53 |
| **Course title :** | **Wild Animals Nutrition** |
| **Program title:** | Master |
| **Contact hours/ week** | Lecture: 1 Practical: 2 Total: 3 |
| **Approval Date** | 9/9/2018 |

## 2-Professional information

**Overall aims of course**:

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

1- Apply the analytical and evaluating approaches to knowledge in diagnosis, prevention and control of wild animal's nutritional disorder and other related sciences.

2-Integrate the acquired knowledge about wild animal's nutritional problems with the other related sciences and develop the relations in between.

3-Intensively aware the current problems facing these wild animals and recent theories illustrating control of wild animal nutritional requirements.

4-Identify the practical problems facing wild animal's requirements and their solutions.

5-Master wide range of professional skills and techniques diagnosis of wild animals feeding system.

6-Properly use the suitable technologies to serve of his/her professional practices.

7-Make decisions depending on the available data in different professional and practical contexts.

8-Show awareness of his/her role in community development and environmental conservation in the area of wild animal's nutrition in the light of global and regional variables.

9-Perform self-development and continuous learning and transfer the acquired knowledge and experience to others.

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

### a- Knowledge and understanding:

**By successful completion of the course, the student should be able to:**

a1. Enumerate information and knowledge in the field of wild animals nutrition and related sciences.

a2. Identify technical nutritional terms, feedstuffs and related parameters.

a3. Recognize the mutual influence between different professional practices and their impacts on the environment.

### b-Intellectual skills

**By successful completion of the course, the student should be able to:**

# Course specification of postgraduate

b1. Analyze and evaluate knowledge related to wild animal's requirements and interpret it to solve the related problems.
b2. Create a Solution field problem of nutritional origin affecting wild animals using the available data.
b3. Conduct research studies that add new knowledge to the area of wild animal's nutrition.
b4. Propose scientific papers.
b5. Compare different nutritional factors for each practice related to diagnosis, prevention and control of wild and migratory birds diseases.

**C- Professional and practical skills**

**By successful completion of the course, the student should be able to:**

c1. Perform different conventional and advanced techniques in the field of wild animal nutrients calculation.
c2. Write and evaluate reports related to diagnosis of field cases of nutritional origin problems.
c3. Evaluate different available tools and methods regarding design of nutrition programs to obtain safe and high quality rations.

**d- General and transferable skills**

**By successful completion of the course, the student should be able to:**

d1- Properly use computer and internet skills.
d2- Work in teams and appreciate the importance of cooperation.
d3- Properly communicate with others.
d4- Enhance his/her effective presentation skills.

## 4-Topics and contents

| Course | Topic | Weeks | No. of hours | Lectures | Practical |
|---|---|---|---|---|---|
| (Lec. 1h./week, Pract 2h./week) | **Animal nutrition fundamentals Composition of the animal body and its food** | 1,2 | 2 | 2 | - |
| | **Feedstuffs - Classification of feedstuffs** | 1 | 2 | - | 2 |
| | **- Nutrition terms** | 2,3 | 4 | - | 4 |
| | **Water and its metabolism** | 3 | 1 | 1 | - |
| | **Concentrates as energy sources & deleterious factors** | 4,5,6 | 6 | - | 6 |
| | **Carbohydrates and their metabolism** | 4 | 1 | 1 | - |
| | **Proteins and their metabolism** | 5 | 1 | 1 | - |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | **Lipids and their metabolism.** | 6 | 1 | 1 | - |
| | **Plant protein sources & deleterious factors** | 7,8,9 | 6 | - | 6 |
| | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | 5 | 5 | - |
| | **-Forage and roughage** | 10,11,12 ,13 | 8 | - | 8 |
| | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14 ,15 | 4 | 4 | - |
| | **-Feed processing and manufacture** | 14,15,16 ,17 | 8 | - | 8 |
| | **Feed intake and factors affecting** | 16,17 | 2 | 2 | - |
| | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | 6 | - | 6 |
| | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | 3 | 3 | - |
| | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23 ,24,25 | 10 | - | 10 |
| | **Feeding standards and nutritional requirements for:**<br>**-maintenance**<br>**-growth**<br>**-fattening** | 21,22 | 2 | 2 | - |
| | **-reproduction and lactation**<br>**-work production**<br>**-wool production** | 23,24 | 2 | 2 | - |
| | **Ration formulation methods** | 25 | 2 | - | 2 |
| | **Wild animals feeding**<br>**-Nutritional requirements**<br>**-Common feedstuffs used**<br>**-Feeding programs** | 25,26,27 ,28,29, 30,31,32 | 8 | 8 | - |
| | **Ration formulation of wild animals** | 26,27,28 ,29,30 | 10 | - | 10 |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | **Clinical nutrition of wild animals** | 33,34 | 2 | 2 | - |
| | **Environmental factors inducing feed deterioration**<br>**-Mycotoxins and its importance**<br>**-Pesticides** | 31,32 | 4 | - | 4 |
| | **Heavy metals**<br>**-Feed manufacturing quality assurance and its monitoring** | 33,34 | | | |
| | **Feed additives-** | 35,36 | 2 | 2 | - |
| | **Nutritional feed additives**<br>**-Non Nutritional feed additives**<br>**- Nanoparticles feed additives** | 35,36 | 4 | - | 4 |
| | Total | 36 | 108 | 36 | 72 |

## 5-Teaching and learning methods

- **Lectures:**

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

- **Practical sections:**

- Identification of feedstuffs and their evaluation.
- Laboratory feed inspection and chemical analysis.
- Requirements calculation and ration formulation.

- **Self learning**: Electronic learning, Seminars, scientific search on related websites, international, national and local journals, related books in faculty library.
- **Essays and reviews**
- **Discussion groups**

## 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** |
| Written Exam | **a1 to a3** | **b1 to b5** | | |
| Practical Exam | | | **c1 to c3** | |
| Oral Exam | **a1 to a3** | **b1 to b5** | **c1 to c3** | **d1 to d4** |

### 6.2. Assessment schedules

| **Method** | **Week(s)** |
|---|---|
| Written exam | **During December** |

# Course specification of postgraduate

| | |
|---|---|
| Practical exam | **During December** |
| Oral exam | **During December** |
| Student activities | **Along the year** |

**6.3. Weight of assessments**

| Assessment | Weight of assessment |
|---|---|
| Writing exam | **50%** |
| Practical exam | **25%** |
| Oral exam | **25%** |
| total | 100% |

## 7- List of references

**7.1. Notes and books**

**1-Textbook of Animal and Poultry Nutrition – part 1**

**2-Practical of feedstuffs and ration formulation – part 1**

**3-Textbook of Animal and Poultry Nutrition – part 2**

**4-Practical of feedstuffs and ration formulation – part 2**

**5-Textbook of Human Nutrition and Animal Byproducts.**

**7.2. Essential books:**

**1-Cheeke , P.R.(1991): Applied Animal Nutrition, Feeds and Feeding.**
**2- 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.**
**5-Pond, W. G., D.C. Church, and K .R. Pond (1995): Basic Animal Nutrition and Feeding, 4th edition.**

**7.3. Recommended texts**

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

**Journals:**

**Journal of Nutrition**
**-Journal of Animal Science**

# Course specification of postgraduate

**-Journal of Agriculture Science**
**-Nutrition Abstracts and Reviews**
**-Journal of Poultry Science**
**-Journal of small ruminant Nutrition**
**-Veterinary Record**
**-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** **Head of Department**

**Name: Dr. Asmaa S. A. Abdel-daim** **Prof. Dr. Elham Saleh**

**Sig. :**

# Course specification

| Topics | | Wk | Knowledge and Understanding | Intellectual Skills | Practical and Professional Skills | General & Transferable Skills |
|---|---|---|---|---|---|---|
| 1 | **Animal nutrition fundamentals**<br>**Composition of the animal body and its food** | 1,2 | **a1, a2** | **b1,b4,b5** | - | **d1, d2** |
| 2 | **Feedstuffs**<br>**- Classification of feedstuffs** | 1 | - | - | **c1,c2** | **d1, d2** |
| 3 | **- Nutrition terms** | 2,3 | - | - | **c1,c2** | **d1, d2** |
| 4 | **Water and its metabolism** | 3 | **a1, a2** | **b1,b4,b5** | - | **d1, d2** |
| 5 | **Concentrates as energy sources & deleterious factors** | 4,5,6 | - | - | **c1, c2, c3** | **d1, d2** |
| 6 | **Carbohydrates and their metabolism** | 4 | **a1, a2** | **b1,b4,b5** | - | **d1, d2** |
| 7 | **Proteins and their metabolism** | 5 | **a1, a2** | **b1,b4,b5** | - | **d1, d2** |
| 8 | **Lipids and their metabolism.** | 6 | **a1, a2** | **b1,b4,b5** | - | **d1, d2** |
| 9 | **Plant protein sources & deleterious factors** | 7,8,9 | - | - | **c1, c3** | **d2, d3, d4** |
| 10 | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | **a1,a2,a3** | **b1,b4,b5** | - | **d3, d4** |
| 11 | **-Forage and roughage** | 10,11,12,13 | - | - | **c1, c2, c3** | **d1,d2,d3** |
| 12 | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14,15 | **a1,a2,a3** | **b1,b4,b5** | - | **d3, d4** |
| 13 | **-Feed processing and manufacture** | 14,15,16,17 | - | - | **c1, c2, c3** | **d2, d4** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| 14 | **Feed intake and factors affecting** | 16,17 | **a1, a2, a3** | **b1,b4,b5** | - | **d1, d2, d3** |
| 15 | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | - | - | **c1, c2, c3** | **d2, d3, d4** |
| 16 | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | **a1,a2,a3** | **b1,b2,b3,b4,b5** | - | **d1,d2** |
| 17 | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23,24,25 | - | - | **c1, c2, c3** | **d1,d2,d3** |
| 18 | **Feeding standards and nutritional requirements for:**<br>**-maintenance**<br>**-growth**<br>**-fattening** | 21,22 | **a1,a2,a3** | **b1,b2,b3,b4,b5** | - | **d1,d2,d3,d4** |
| 19 | **-reproduction and lactation**<br>**-work production**<br>**-wool production** | 23,24 | **a1,a2,a3** | **b1,b2,b3,b4,b5** | - | **d1,d2,d3,d4** |
| 20 | **Ration formulation methods** | 25 | - | - | **c1, c2, c3** | **d1,d2,d3,d4** |
| 21 | **Wild animals feeding**<br>**-Nutritional requirements**<br>**-Common feedstuffs used**<br>**-Feeding programs** | 25,26,27,28,29,<br>30,31,32 | **a1,a2,a3** | **b1,b2,b3,b4,b5** | - | **d1,d2,d3,d4** |
| 22 | **Ration formulation of wild animals** | 26,27,28,29,30 | - | - | **c1, c2, c3** | **d1,d2,d3,d4** |
| 23 | **Clinical nutrition of wild animals** | 33,34 | **a1,a2,a3** | **b1,b2,b3,b4,b5** | - | **d1,d2,d3,d4** |
| 24 | **Environmental factors inducing feed deterioration**<br>**-Mycotoxins and its importance**<br>**-Pesticides** | 31,32 | - | - | **c1, c2, c3** | **d1,d2,d3,d4** |
| 25 | **Heavy metals**<br>**-Feed manufacturing quality assurance and its monitoring** | 33,34 | - | - | **c1, c2, c3** | **d1,d2,d3,d4** |
| 26 | **Feed additives-** | | **a1,a2,a3** | **b1,b2,b3,b4,b5** | - | **d1,d2** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 35,36 | | | | |
| 27 | **Nutritional feed additives**<br>**-Non Nutritional feed additives**<br>**- Nanoparticles feed additives** | 35,36 | - | - | **c1, c2, c3** | **d1,d2,d3** |
| **Student activity** | | **Along the course** | **a1,a2,a3** | **b3,b4,b5** | **c2** | **d1, d2, d3, d4** |

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

## 1-Basic information

| | |
|---|---|
| **Course Code:** | M-54 |
| **Course title :** | Lab Animals Nutrition |
| **Program title:** | MDSc. |
| **Contact hours/ week** | Lecture:1 Practical: 2 Total: 3 |
| **Approval Date** | 9/9/2018 |

## 2-Professional information

**Overall aims of course**:

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

- Apply the analytical and evaluating approaches to knowledge in lab animal nutritional requirements and other related sciences.
- Integrate the acquired knowledge about lab animal feeding with the other related sciences and develop the relations in between.
- Intensively aware the current problems facing lab animal feeds and recent theories illustrating lab animal feeding systems.
- Identify the practical problems facing lab animal's diet formulation and their solutions.
- Master wide range of professional skills and techniques lab animal nutritional disorders.
- Properly use the suitable technologies to serve of his/her professional practices.
- Properly employ the available resources and develop them and search for new ones.
- Show awareness of his/her role in community development and environmental conservation in the area of lab animal nutrition in the light of global and regional variables.
- Perform self development and continuous learning and transfer the acquired knowledge and experience to others.

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

### a- Knowledge and understanding:

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

a1. Define recent theories and knowledge in the field of lab animal's nutritional requirements.
a2. Underline principles and morals of scientific research in lab animal nutrition.

# Course specification

a3. Identify the legal and moral rules in different practices applied in lab animal feeding and know safety measures applied when handling hazardous substance.
a4. Describe the principles and importance of high quality practices in development of lab animal feeding.
a5. Explain the mutual influence between different professional practices and their impacts on the environment.

**b-Intellectual skills**

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

b1. Analyze and evaluate knowledge related to fundamentals of feed evaluation, nutritional requirements, feeding systems and high quality ration formulation.
b2. Operate solution field problems of lab animal nutrition using the available data.
b3. Construct research studies that add new knowledge to the area of lab animal nutritional requirements.
b4. Propose scientific papers.
b5. Compare different nutritional factors for each practice related to lab animal feeding system.

**C- Professional and practical skills**

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

c1. Perfectly perform different conventional and advanced techniques in the field of lab animal feed analysis.
c2. Write and evaluate reports related to diagnosis of field cases of nutritional origin.
c3. Evalute different available tools and methods regarding design nutrition program to obtain safe and high quality rations.

**d- General and transferable skills**

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

d1. Communicate effectively using different means.
d2. Properly use the information technologies for development of his/her professional abilities.
d3. Perform self development and continuous learning and transfer the acquired knowledge and experience to others.
d4. Assess him/her to learn how to detect his/her learning requirements.
d5. Use different facilities for gaining knowledge and information.

# Course specification

## 4-Topics and contents

| Course | Topic | Weeks | No. of hours | Lectures | Practical |
|---|---|---|---|---|---|
| (Lec. 1h./week, Pract 2h./week) | **Animal nutrition fundamentals Composition of the animal body and its food** | 1,2 | 2 | 2 | - |
| | **Feedstuffs - Classification of feedstuffs** | 1 | 2 | - | 2 |
| | **- Nutrition terms** | 2,3 | 4 | - | 4 |
| | **Water and its metabolism** | 3 | 1 | 1 | - |
| | **Concentrates as energy sources & deleterious factors** | 4,5,6 | 6 | - | 6 |
| | **Carbohydrates and their metabolism** | 4 | 1 | 1 | - |
| | **Proteins and their metabolism** | 5 | 1 | 1 | - |
| | **Lipids and their metabolism.** | 6 | 1 | 1 | - |
| | **Plant protein sources & deleterious factors** | 7,8,9 | 6 | - | 6 |

# Course specification

| | | | | | |
|---|---|---|---|---|---|
| | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | 5 | 5 | - |
| | **-Forage and roughage** | 10,11,12 ,13 | 8 | - | 8 |
| | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14 ,15 | 4 | 4 | - |
| | **-Feed processing and manufacture** | 14,15,16 ,17 | 8 | - | 8 |
| | **Feed intake and factors affecting** | 16,17 | 2 | 2 | - |
| | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | 6 | - | 6 |
| | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | 3 | 3 | - |
| | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23 ,24,25 | 10 | - | 10 |
| | **Feeding standards and nutritional requirements for:**<br>**-maintenance**<br>**-growth**<br>**-fattening** | 21,22 | 2 | 2 | - |

# Course specification

| | | | | | |
|---|---|---|---|---|---|
| | **-reproduction and lactation<br>-work production<br>-wool production** | 23,24 | 2 | 2 | - |
| | **Ration formulation methods** | 25 | 2 | - | 2 |
| | **Lab animals feeding-<br>-Nutritional requirements-<br>-Common feedstuffs used<br>-Feeding programs** | 25,26,27<br>,28,29,<br>30,31,32 | 8 | 8 | - |
| | **Ration formulation of lab animals** | 26,27,28<br>,29,30 | 10 | - | 10 |
| | **Clinical nutrition of lab animals** | 33,34 | 2 | 2 | - |
| | **Environmental factors inducing feed deterioration<br>-Mycotoxins and its importance<br>-Pesticides** | 31,32 | 4 | - | 4 |
| | **Heavy metals<br>-Feed manufacturing quality assurance and its monitoring** | 33,34 | | | |
| | **Feed additives-** | 35,36 | 2 | 2 | - |
| | **Nutritional feed additives<br>-Non Nutritional feed additives<br>- Nanoparticles feed additives** | 35,36 | 4 | - | 4 |
| | Total | 36 | 108 | 36 | 72 |

# Course specification

## 5-Teaching and learning methods

- **Lectures:**

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

- **Practical sections:**

- Identification of feedstuffs and their evaluation.
- Laboratory feed inspection and chemical analysis.
- Requirements calculation and ration formulation.

- **Self learning**: Electronic learning, Seminars, scientific search on related websites, international, national and local journals, related books in faculty library.
- **Essays and reviews**
- **Discussion groups**

## 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 |
| Written Exam | a1 to a5 | b1 to b5 | | |
| Practical Exam | | | c1 to c3 | |
| Oral Exam | a1 to a5 | b1 to b5 | c1 to c3 | d1 to d5 |

**6.2. Assessment schedules**

| Method | Week(s) |
|---|---|
| Written exam | During December |
| Practical exam | During December |

# Course specification

| | |
|---|---|
| Oral exam | **During December** |
| Student activities | **Along the year** |

**6.3. Weight of assessments**

| Assessment | Weight of assessment |
|---|---|
| Writing exam | **50%** |
| Practical exam | **25%** |
| Oral exam | **25%** |
| total | 100% |

## 7- List of references

**7.1. Notes and books**

**1-Textbook of Animal and Poultry Nutrition – part 1**

**2-Practical of feedstuffs and ration formulation – part 1**

**3-Textbook of Animal and Poultry Nutrition – part 2**

**4-Practical of feedstuffs and ration formulation – part 2**

**5-Textbook of Human Nutrition and Animal Byproducts.**

**7.2. Essential books:**

**1-Cheeke , P.R.(1991): Applied Animal Nutrition, Feeds and Feeding.**
**2- 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.**
**5-Pond, W. G., D.C. Church, and K .R. Pond (1995): Basic Animal Nutrition and Feeding, 4th edition.**

# Course specification

**7.3. Recommended texts**

**1-Cheeke, P.R. (1987): Rabbit Feeding and Nutrition.**

**2- Frappe, D. (1998): Equine Nutrition And Feeding .2nd ed.**

**3- National Research Council (1985): Nutrient Requirements of Sheep, 6th rev. ed. Washington, D.C.: National Academy of Sciences.**

**4- National Research Council (1988): Nutrient Requirements of Dairy Cattle, 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.**

**Journals:**

**Journal of Nutrition**
**-Journal of Animal Science**
**-Journal of Agriculture Science**
**-Nutrition Abstracts and Reviews**
**-Journal of Poultry Science**
**-Journal of small ruminant Nutrition**
**-Veterinary Record**
**-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**

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

**Course Coordinators**

**Name: Dr. Asmaa Salah Awad**

**Sig. :**

**Head of Department**

**Prof. Dr. Elham Saleh**

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

| Topics | | Wk | Knowledge and Understanding | Intellectual Skills | Practical and Professional Skills | General & Transferable Skills |
|---|---|---|---|---|---|---|
| 1 | **Animal nutrition fundamentals**<br>**Composition of the animal body and its food** | 1,2 | **a1, a3,a4** | **b1,b5** | - | **d1, d2, d3** |
| 2 | **Feedstuffs**<br>**- Classification of feedstuffs** | 1 | - | - | **c1** | **d1, d2** |
| 3 | **- Nutrition terms** | 2,3 | - | - | **c1** | **d1, d2** |
| 4 | **Water and its metabolism** | 3 | **a1, a3,a4** | **b1,b5** | - | **d1, d2** |
| 5 | **Concentrates as energy sources & deleterious factors** | 4,5,6 | - | - | **c1, c3, c2** | **d1, d2** |
| 6 | **Carbohydrates and their metabolism** | 4 | - | **b1,b5** | - | **d1, d2** |
| 7 | **Proteins and their metabolism** | 5 | **a1, a3,a4** | **b1,b5** | - | **d3, d4, d5** |
| 8 | **Lipids and their metabolism.** | 6 | **a1, a2, a4,a5** | **b1,b5** | - | **d3, d4, d5** |
| 9 | **Plant protein sources & deleterious factors** | 7,8,9 | - | - | **c1,c2,c3** | **d3, d4, d5** |
| 10 | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | **a1, a2, a4,a5** | **b1,b2,b3,b4.b5** | - | **d3, d4, d5** |
| 11 | **-Forage and roughage** | 10,11,12,13 | - | - | **c1, c2,c3** | **d2, d4, d5** |
| 12 | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14,15 | **a1, a2, a4,a5** | **b1,b2,b3,b4,b5** | - | **d2, d4, d5** |
| 13 | **-Feed processing and manufacture** | 14,15,16,17 | - | - | **c1, c2,c3** | **d2, d4, d5** |
| 14 | **Feed intake and factors affecting** | 16,17 | **a1, a2, a4,a5** | - | - | **d2, d4, d5** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| 15 | **Feedstuffs analyses<br>-Physical inspection** | 18,19,20 | - | - | **c1, c2,c3** | **d2, d4, d5** |
| 16 | **Digestion & absorption<br>Digestibility of feeds** | 18,19,20 | **a1, a2, a4,a5** | **b1,b2,b3,b4,b5** | - | **d2, d4, d5** |
| 17 | **-Microscopical examination<br>-Chemical analyses<br>-Using standard feed analyses tables** | 21,22,23,24,25 | - | - | **c1, c2,c3** | **d2, d4, d5** |
| 18 | **Feeding standards and nutritional requirements for:<br>-maintenance<br>-growth<br>-fattening** | 21,22 | **a1, a2, a4,a5** | **b1,b2,b3,b4,b5** | - | **d2, d4, d5** |
| 19 | **-reproduction and lactation<br>-work production<br>-wool production** | 23,24 | **a1,a3, a2, a4,a5** | **b1,b2,b3,b4, b5** | - | **d3, d4, d5** |
| 20 | **Ration formulation methods** | 25 | - | - | **c1,c2, c3** | **d2, d4, d5** |
| 21 | **Lab animals feeding-<br>-Nutritional requirements-<br>-Common feedstuffs used<br>-Feeding programs** | 25,26,27,28,29,<br>30,31,32 | **a1, a2,a3, a4,a5** | **b1,b2,b3,b4,b5** | - | **d2, d4, d5** |
| | **Ration formulation of lab animals** | 26,27,28,29,30 | - | - | **c1,c2,c3** | **d1,d2,d3** |
| | **Clinical nutrition of lab animals** | 33,34 | **a1, a2,a3, a4,a5** | **b1,b2,b3** | - | **d1,d2,d3** |
| | **Environmental factors inducing feed deterioration<br>-Mycotoxins and its importance<br>-Pesticides** | 31,32 | - | - | **c1,c2,c3** | **d1,d2,d3** |
| | **Heavy metals<br>-Feed manufacturing quality assurance and its monitoring** | 33,34 | - | - | **c1,c2,c3** | **d1,d2,d3,d4,d5** |
| | **Feed additives-** | 35,36 | **a1,a2,a4,a5** | **b1,b2,b3,b4,b5** | - | **d1,d2,d3,d4,d5** |
| | **Nutritional feed additives** | | - | - | **c1,c2,c3** | **d1,d2,d3,d4,d5** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| | **-Non Nutritional feed additives**<br>**- Nanoparticles feed additives** | 35,36 | | | | |
| **Student activity** | | **Along the course** | **a1,a2,a3,a4,a5** | **b1,b2,b3,b4,b5** | **c1,c2,c3** | **d1,d2,d3,d4,d5** |

Beni-Suef University
Faculty of Veterinary Medicine

# Course specification of postgraduate

## 1-Basic information

| | |
|---|---|
| **Course Code:** | M-55 |
| **Course title :** | Feed additives |
| **Program title:** | MDSc. |
| **Contact hours/ week** | Lecture: 1 Practical: 2 Total: 3 |
| **Approval Date** | |

## 2-Professional information

**Overall aims of course**:

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

- Apply the analytical and evaluating approaches to knowledge in identification, inspection and examination of feed additives and their use in rations.
- Integrate the acquired knowledge about feed additives values in tables with the other related sciences and develop the relations in between.
- Intensively aware of the current problems in feed industry and recent theories illustrating prevention and control of these problems.
- Identify the practical problems facing feed additives industry and their solutions.
- Properly use the suitable technologies to serve of his/her professional practices.
- Properly employ the available resources and develop them and search for new ones.
- Show awareness of his/her role in community development and environmental conservation in the area of feed industry in the light of global and regional variables.
- Perform self-development and continuous learning and transfer the acquired knowledge and experience to others.

## 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 information and knowledge in the field of feed additives evaluation and related sciences.

a2. Underline principles and morals of scientific research in the field of feed additive industry.

a3. Identify the legal and moral rules in different practices applied in analysis, inspection and feed evaluation.

a4. Recognize the principles and importance of high quality practices in development of feed industry.

a5. Explain the mutual influence between different professional practices and their impacts on the environment.

### b-Intellectual skills

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

b1. Analyze and evaluate knowledge related to feed additives and interpret it to solve the related problems.

b2. Operate solution field problems of feed industry affecting animal nutrition and economics

# Course specification of postgraduate

using the available data.

b3. Create research studies that add new knowledge to the area of feed additives evaluation.

b5. Compare different risk factors for each practice related to chemical analysis and feed manufacturing.

**C- Professional and practical skills**

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

c1. Perfectly perform different conventional and advanced techniques in the field of feed analysis.
c2. Write and evaluate reports related to field cases of feed industry.
c3. Write and evaluate scientific papers.
c4. Evalute different available tools and methods regarding feed additives evaluation and HACCP in their manufacturing.

**d- General and transferable skills**

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

d1. Communicate effectively using different means.
d2. Properly use the information technologies for development of his/her professional abilities.
d3. Perform self development and continuous learning and transfer the acquired knowledge and experience to others.
d4. Assess how to detect his/her learning requirements.
d5. Use different facilities for gaining knowledge and information.

**4-Topics and contents**

| Course | Topic | Weeks | No. of hours | Lectures | Practical |
|---|---|---|---|---|---|
| (Lec. 1h./week, Pract 2h./week) | **Animal nutrition fundamentals**<br>**Composition of the animal body and its food** | 1,2 | 2 | 2 | - |
| | **Feedstuffs**<br>**- Classification of feedstuffs** | 1 | 2 | - | 2 |
| | **- Nutrition terms** | 2,3 | 4 | - | 4 |
| | **Water and its metabolism** | 3 | 1 | 1 | - |
| | **Concentrates as energy sources & deleterious factors** | 4,5,6 | 6 | - | 6 |
| | **Carbohydrates and their metabolism** | 4 | 1 | 1 | - |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | **Proteins and their metabolism** | 5 | 1 | 1 | - |
| | **Lipids and their metabolism.** | 6 | 1 | 1 | - |
| | **Plant protein sources & deleterious factors** | 7,8,9 | 6 | - | 6 |
| | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | 5 | 5 | - |
| | **-Forage and roughage** | 10,11,12 ,13 | 8 | - | 8 |
| | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14 ,15 | 4 | 4 | - |
| | **-Feed processing and manufacture** | 14,15,16 ,17 | 8 | - | 8 |
| | **Feed intake and factors affecting** | 16,17 | 2 | 2 | - |
| | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | 6 | - | 6 |
| | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | 3 | 3 | - |
| | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23 ,24,25 | 10 | - | 10 |
| | **Feeding standards and nutritional requirements** | 21,22,23 ,24 | 4 | 4 | - |
| | **Ration formulation methods and feed additives inclusion** | 25 | 2 | - | 2 |
| | **Feed additive legislation**<br>**-Feed additives**<br>**-Feed materials**<br>**-Veterinary medicinal products**<br>**-Legislation in the USA** | **25,26,27 ,28,29, 30,31,32** | 8 | 8 | - |
| | **-Precautions for feed additives users**<br>**-Evaluating feed additives**<br>***- Evaluating feed additives at the farm level***<br>***-Evaluating feed additives at the industry level*** | 26,27,28 ,29,30 | 10 | - | 10 |
| | **Feed additives commonly used** | 31,32 | 4 | - | 4 |
| | **Feed manufacturing quality assurance and its monitoring** | 33,34 | | | |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | **Feed additives classification**<br>**Functional properties of feed additives** | 33,34<br>35,36 | 4 | 4 | - |
| | **-Nutritional feed additives**<br>**-Non Nutritional feed additives**<br>**- Nanoparticles feed additives** | 35,36 | 4 | - | 4 |
| | Total | 36 | 108 | 36 | 72 |

## 5-Teaching and learning methods

- **Lectures:**

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

- **Practical sections:**

- Identification of feedstuffs and their evaluation.
- Laboratory feed inspection and chemical analysis.
- Requirements calculation and ration formulation.

- **Self learning**: Electronic learning, Seminars, scientific search on related websites, international, national and local journals, related books in faculty library.
- **Essays and reviews**
- **Discussion groups**

## 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** |
| Written Exam | **a1 to a5** | **b1 to b5** | | |
| Practical Exam | | | **c1 to c4** | |
| Oral Exam | **a1 to a5** | **b1 to b5** | **c1 to c4** | **d1 to d5** |

### 6.2. Assessment schedules

| **Method** | **Week(s)** |
|---|---|
| Written exam | **During December** |
| Practical exam | **During December** |
| Oral exam | **During December** |
| Student activities | **Along the year** |

### 6.3. Weight of assessments

| Assessment | Weight of assessment |
|---|---|
| Writing exam | **50%** |

# Course specification of postgraduate

| | |
|---|---|
| Practical exam | **25%** |
| Oral exam | **25%** |
| total | 100% |

## 7- List of references

**7.1. Notes and books**

**1-Textbook of Animal and Poultry Nutrition – part 1**

**2-Practical of feedstuffs and ration formulation – part 1**

**3-Textbook of Animal and Poultry Nutrition – part 2**

**4-Practical of feedstuffs and ration formulation – part 2**

**5-Textbook of Human Nutrition and Animal Byproducts.**

**7.2. Essential books:**

**1-Cheeke , P.R.(1991): Applied Animal Nutrition, Feeds and Feeding.**
**2- 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.**
**5-Pond, W. G., D.C. Church, and K .R. Pond (1995): Basic Animal Nutrition and Feeding, 4th edition.**

**7.3. Recommended texts**

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

**Journals:**

**Journal of Nutrition**
**-Journal of Animal Science**
**-Journal of Agriculture Science**
**-Nutrition Abstracts and Reviews**
**-Journal of Poultry Science**
**-Journal of small ruminant Nutrition**
**-Veterinary Record**
**-Journal of Dairy Science**

**Websites:**

**www.google.com**

# Course specification of postgraduate

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

**Course Coordinators** **Head of Department**

**Name: Dr. Asmaa S. A. Abdel-daim** **Prof. Dr. Elham Saleh**

**Sig. :**

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

| Topics | | Wk | Knowledge and Understanding | Intellectual Skills | Practical and Professional Skills | General & Transferable Skills |
|---|---|---|---|---|---|---|
| 1 | **Animal nutrition fundamentals Composition of the animal body and its food** | 1,2 | a1,a3 | b1,b2,b3,b5 | - | d1, d2 |
| 2 | **Feedstuffs<br>- Classification of feedstuffs** | 1 | - | b1,b2,b3 | c1,c2 | d1, d2 |
| 3 | **- Nutrition terms** | 2,3 | - | b1,b2,b3 | c2,c3 | d1, d2 |
| 4 | **Water and its metabolism** | 3 | a1, a3 | b1,b2,b3 | - | d1, d2 |
| 5 | **Concentrates as energy sources & deleterious factors** | 4,5,6 | - | b1,b2,b3 | - | d1, d2 |
| 6 | **Carbohydrates and their metabolism** | 4 | a1, a3 | b1,b2,b3 | c1,c2,c3 | d1, d2 |
| 7 | **Proteins and their metabolism** | 5 | a1, a3 | b1,b2,b3 | - | d1, d2 |
| 8 | **Lipids and their metabolism.** | 6 | a1, a3 | b1,b2,b3 | - | d1, d2 |
| 9 | **Plant protein sources & deleterious factors** | 7,8,9 | - | b1,b2,b3 | c1,c2,c3 | d1, d2, d3 |
| 10 | **Minerals- macro & microelements<br>- Introduction, distribution, functions<br>- Deficiencies, supplements** | 7,8,9,10, 11 | a1, a2, a3 | b1,b2,b3 | - | d1, d2, d3 |
| 11 | **-Forage and roughage** | 10,11,12,13 | - | b1,b2,b3 | c1,c2,c3 | d1, d2 |
| 12 | **Vitamins<br>- Vitamin and animal health<br>- Fat-soluble vitamins<br>- Water-soluble vitamins** | 12,13,14,15 | a1, a2, a3 | b1,b2,b3 | - | d1, d2 |
| 13 | **-Feed processing and manufacture** | 14,15,16,17 | - | b1,b2,b3 | c1,c4 | d1, d2 |
| 14 | **Feed intake and factors affecting** | 16,17 | a1, a2, a3 | b1,b2,b3 | - | d1, d2 |
| 15 | **Feedstuffs analyses** | 18,19,20 | - | b1,b2,b3 | c1,c2,c4 | d1, d2 |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| | **-Physical inspection** | | | | | |
| 16 | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | **a1, a2, a3** | **b2,b3,b4,b5** | - | **d3, d4, d5** |
| 17 | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23,24,25 | - | **b3,b4** | **c1,c4** | **d3, d4, d5** |
| 18 | **Feeding standards and nutritional requirements** | 21,22,23,24 | **a1, a2, a3** | **b5** | - | **d3, d4, d5** |
| 19 | **Ration formulation methods and feed additives inclusion** | 25 | **a3** | **b3,b4** | **c2, c3,c4** | **d3, d4, d5** |
| 20 | **Feed additive legislation**<br>**-Feed additives**<br>**-Feed materials**<br>**-Veterinary medicinal products**<br>**-Legislation in the USA** | **25,26,27,28,29, 30,31,32** | **a2, a3,a4,a5** | **b1,b2,b4** | | **d2, d4, d5** |
| 21 | **-Precautions for feed additives users**<br>**-Evaluating feed additives**<br>***- Evaluating feed additives at the farm level***<br>***-Evaluating feed additives at the industry level*** | 26,27,28,29,30 | - | **b1** | **c2, c3,c4** | **d2, d4, d5** |
| 22 | **Feed additives commonly used** | 31,32 | **a2, a3,a4,a5** | **b1** | - | **d2, d4, d5** |
| 23 | **Feed manufacturing quality assurance and its monitoring** | 33,34 | - | **b1,b2** | **c4** | **d2, d4, d5** |
| 24 | **Feed additives classification**<br>**Functional properties of feed additives** | 33,34<br>35,36 | **a2, a3,a4,a5** | **b1** | **c1, c2, c3** | **d2, d4, d5** |
| 25 | **-Nutritional feed additives**<br>**-Non Nutritional feed additives**<br>**- Nanoparticles feed additives** | 35,36 | - | **b1,b2,b4** | **c1, c2, c4** | **d2, d4, d5** |
| **Student activity** | | **Along the course** | **a1, a2, a3, a4,a5** | **b1, b2, b3** | **c3** | **d1, d2, d3, d4,d5** |

Beni-Suef University
Faculty of Veterinary Medicine

# Course specification of postgraduate

## 1-Basic information

| | |
|---|---|
| **Course Code:** | M-56 |
| **Course title :** | Feedstuffs Analysis |
| **Program title:** | MDSc. |
| **Contact hours/ week** | Lecture: 2 Practical: 2 Total: 4 |
| **Approval Date** | 9/9/2018 |

## 2-Professional information

**Overall aims of course**:

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

- Master the principles of scientific research.
- Work continuously to develop his/her knowledge in the field of feedstuffs evaluation.
- Apply the analytical and evaluating approaches to knowledge in identification, inspection and examination of feedstuffs and their use in rations.
- Integrate the acquired knowledge about feedstuffs values in tables with the other related sciences and develop the relations in between.
- Identify the practical problems facing feedstuffs industry and their solutions.
- Develop new techniques and tools to be applied in feedstuffs evaluation and use.
- Properly use the suitable technologies to serve of his/her professional practices.
- Effectively communicate and lead team works.
- Make decisions depending on the available data in different professional and practical contexts.
- Show awareness of his/her role in community development and environmental conservation in the area of feed industry in the light of global and regional variables.
- Commit the moral and legal rules of nutrition specialist.
- Perform self development and continuous learning and transfer the acquired knowledge and experience to others.

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

### a- Knowledge and understanding:

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

a1. Define recent theories and knowledge in the field of feedstuffs evaluation and related sciences.

a2. Underline principles and morals of scientific research in the field of feed industry.

a3. Identify the legal and moral rules in different practices applied in analysis, inspection and feed evaluation.

a4. Explain the principles and importance of high quality practices in development of feed industry.

a5. Describe the mutual influence between different professional practices and their impacts on the environment.

# Course specification of postgraduate

**b-Intellectual skills**

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

b1. Analyze and evaluate knowledge related to feedstuffs and interpret it to solve the related problems.
b2. Create solution field problems of feed industry affecting animal nutrition and economics using the available data.
b3. Conduct research studies that add new knowledge to the area of feedstuffs evaluation.
b4. Demonstrate different risk factors for each practice related to chemical analysis and feed manufacturing.
b5. Properly plan for performance enhancement in feedstuffs classification and nomenclature.
b6. Set up decisions using the available information in different practices related to feedstuffs tables.

**C- Professional and practical skills**

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

c1. Perfectly perform different conventional and advanced techniques in the field of feed analysis.
c2. Write and evaluate reports related to field cases of feed industry.
c3. Write and evaluate scientific papers.
c4. Evaluate different available tools and methods regarding feed analysis technique and its interpretation.

**d- General and transferable skills**

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

d1. Communicate effectively using different means.
d2. Properly use the information technologies for development of his/her professional abilities.
d3. Perform self-development and continuous learning and transfer the acquired knowledge and experience to others.
d4. Assess how to detect his/her learning requirements.
d5. Create rules and indicators for evaluation of the performance of others.
d6. Use different facilities for gaining knowledge and information.
d7. Learn how to work effectively as part of a team and properly manage the time.
d8. Manage scientific meetings and conferences.

## 4-Topics and contents

| Course | Topic | Weeks | No. of hours | Lectures | Practical |
|---|---|---|---|---|---|
| (Lec. 2h./week, Pract 2h./week) | **Animal nutrition fundamentals**<br>**Composition of the animal body and its food** | 1,2 | 6 | 6 | - |
| | **Feedstuffs**<br>**- Classification of feedstuffs** | 1 | 2 | - | 2 |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | **- Nutrition terms** | 2,3 | 4 | - | 4 |
| | **Water and its metabolism** | 3 | 2 | 2 | - |
| | **Concentrates as energy sources & deleterious factors** | 4,5,6 | 6 | - | 6 |
| | **Carbohydrates and their metabolism** | 4 | 2 | 2 | - |
| | **Proteins and their metabolism** | 5 | 2 | 2 | - |
| | **Lipids and their metabolism.** | 6 | 2 | 2 | - |
| | **Plant protein sources & deleterious factors** | 7,8,9 | 6 | - | 6 |
| | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | 10 | 10 | - |
| | **-Forage and roughage** | 10,11,12 ,13 | 8 | - | 8 |
| | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14 ,15 | 8 | 8 | - |
| | **-Feed processing and manufacture** | 14,15,16 ,17 | 8 | - | 8 |
| | **Feed intake and factors affecting** | 16,17 | 4 | 4 | - |
| | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | 6 | - | 6 |
| | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | 6 | 6 | - |
| | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23 ,24,25 | 10 | - | 10 |
| | **Feeding standards and nutritional requirements** | 21,22 | 4 | 4 | - |
| | **- Animal feed safety and feed manufacturing** | 25,26 | 4 | - | 4 |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | **Feed contaminants and its sources** | 27,28 | 4 | 4 | - |
| | **Feed additive legislation**<br>**-Feed additives**<br>**-Feed materials**<br>**-Veterinary medicinal products**<br>**-Legislation in the USA** | 29,30 | 4 | 4 | 2 |
| | **Precautions for feed additives users**<br>**-Evaluating feed additives**<br>***- Evaluating feed additives at the farm level***<br>***-Evaluating feed additives at the industry level*** | 31,32,33 ,34,35 | 10 | 10 | - |
| | **-Nutritional feed additives** | 28,29,30 | 4 | - | 4 |
| | **Feed additives commonly used** | 36 | 2 | 2 | - |
| | **-Non Nutritional feed additives**<br>**- Nanoparticles feed additives** | 31,32 | **4** | **-** | 4 |
| | **Environmental factors inducing feed deterioration**<br>**-Mycotoxins and its importance**<br>**-Pesticides** | 33,34 | 4 | - | 4 |
| | **-Heavy metals**<br>**-Feed manufacturing quality assurance and its monitoring** | 35,36 | 4 | - | 4 |
| | Total | | 144 | 72 | 72 |

## 5-Teaching and learning methods

- **Lectures:**

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

- **Practical sections:**

- Identification of feedstuffs and their evaluation.
- Laboratory feed inspection and chemical analysis.
- Requirements calculation and ration formulation.

- **Self learning**: Electronic learning, Seminars, scientific search on related websites, international, national and local journals, related books in faculty library.
- **Essays and reviews**
- **Discussion groups**

## 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** |
| Written Exam | **a1 to a5** | **b1 to b6** | | |
| Practical Exam | | | **c1 to c4** | |

# Course specification of postgraduate

| | | | | |
|---|---|---|---|---|
| Oral Exam | **a1 to a5** | **b1 to b6** | **c1 to c4** | **d1 to d8** |

**6.2. Assessment schedules**

| Method | Week(s) |
|---|---|
| Written exam | **During December** |
| Practical exam | **During December** |
| Oral exam | **During December** |
| Student activities | **Along the year** |

**6.3. Weight of assessments**

| Assessment | Weight of assessment |
|---|---|
| Writing exam | **50%** |
| Practical exam | **25%** |
| Oral exam | **25%** |
| total | 100% |

## 7- List of references

**7.1. Notes and books**

**1-Textbook of Animal and Poultry Nutrition – part 1**

**2-Practical of feedstuffs and ration formulation – part 1**

**3-Textbook of Animal and Poultry Nutrition – part 2**

**4-Practical of feedstuffs and ration formulation – part 2**

**5-Textbook of Human Nutrition and Animal Byproducts.**

**7.2. Essential books:**

**1-Cheeke , P.R.(1991): Applied Animal Nutrition, Feeds and Feeding.**
**2- 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.**
**5-Pond, W. G., D.C. Church, and K .R. Pond (1995): Basic Animal Nutrition and Feeding, 4th edition.**

**7.3. Recommended texts**

**1-Cheeke, P.R. (1987): Rabbit Feeding and Nutrition.**
**2- Frappe, D. (1998): Equine Nutrition And Feeding .2nd ed.**
**3- National Research Council (1985): Nutrient Requirements of Sheep, 6th rev. ed. Washington, D.C.: National Academy of Sciences.**

# Course specification of postgraduate

**4- National Research Council (1988): Nutrient Requirements of Dairy Cattle, 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.**

**Journals:**

**Journal of Nutrition**
**-Journal of Animal Science**
**-Journal of Agriculture Science**
**-Nutrition Abstracts and Reviews**
**-Journal of Poultry Science**
**-Journal of small ruminant Nutrition**
**-Veterinary Record**
**-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** **Head of Department**

**Name: Dr. Asmaa Salah Awad** **Prof. Dr. Elham Saleh**

**Sig. :**

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

| Topics | | Wk | Knowledge and Understanding | Intellectual Skills | Practical and Professional Skills | General & Transferable Skills |
|---|---|---|---|---|---|---|
| 1 | **Animal nutrition fundamentals**<br>**Composition of the animal body and its food** | 1,2 | **a1, a2** | **b1,b2,b3,b6** | - | **d1, d2,d3** |
| 2 | **Feedstuffs**<br>**- Classification of feedstuffs** | 1 | - | - | **c1,c2** | **d1, d2.d4,d6** |
| 3 | **- Nutrition terms** | 2,3 | - | - | **c1,c2** | **d1, d2** |
| 4 | **Water and its metabolism** | 3 | **a1, a2, a3** | **b1,b2,b3** | - | **d1, d2** |
| 5 | **Concentrates as energy sources & deleterious factors** | 4,5,6 | - | - | - | **d1, d2** |
| 6 | **Carbohydrates and their metabolism** | 4 | **a1, a2, a3** | **b1,b2,b3** | - | **d1, d2** |
| 7 | **Proteins and their metabolism** | 5 | **a1, a2, a3** | **b1,b2,b3** | - | **d1, d2** |
| 8 | **Lipids and their metabolism.** | 6 | **a1, a2, a3** | **b1,b2,b3** | - | **d1, d2** |
| 9 | **Plant protein sources & deleterious factors** | 7,8,9 | - | - | **c1,c2,c4** | **d1, d2, d3** |
| 10 | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | **a1, a2, a3** | **b1,b2,b4,b5,b6** | - | **d1, d2, d3** |
| 11 | **-Forage and roughage** | 10,11,12,13 | - | - | **c1,c2,c4-** | **d1, d2** |
| 12 | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14,15 | **a1, a2, a3** | **b1,b2,b4,b5,b6** | - | **d1, d2** |
| 13 | **-Feed processing and manufacture** | 14,15,16,17 | - | - | **c1,c2,c4** | **d1, d2** |
| 14 | **Feed intake and factors affecting** | 16,17 | **a1, a2, a3** | **b1,b2,b4,b5,b6** | - | **d1, d2** |
| 15 | **Feedstuffs analyses** | 18,19,20 | - | - | **c1,c2,c4** | **d1, d2** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| | **-Physical inspection** | | | | | |
| 16 | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | **a1, a4,a5** | **b2,b3,b4,b5,b6** | - | **d3, d4, d5,d7,d8** |
| 17 | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23,24,25 | - | - | **c1,c2,c4** | **d3, d4, d5,d7,d8** |
| 18 | **Feeding standards and nutritional requirements** | 21,22 | **a4, a5** | **b4,b5,b6** | - | **d3, d4, d5** |
| 19 | **- Animal feed safety and feed manufacturing** | 25,26 | **a3,a4,a5** | **b3,b4** | - | **d3, d4, d5,d7,d8** |
| 20 | **Feed contaminants and its sources** | 27,28 | **a2, a4,a5** | **b1,b2,b4** | - | **d2, d4, d5,d7** |
| 21 | **Feed additive legislation**<br>**-Feed additives**<br>**-Feed materials**<br>**-Veterinary medicinal products**<br>**-Legislation in the USA** | 29,30 | **a1, a2, a3,a5** | **b1,b2,b4,b5,b6** | - | **d2, d4, d5,d6** |
| 22 | **Precautions for feed additives users**<br>**-Evaluating feed additives**<br>***- Evaluating feed additives at the farm level***<br>***-Evaluating feed additives at the industry level*** | 31,32,33,34,35 | **a3,a4, a5** | **b1,b2,b4,b5,b6** | - | **d2, d4, d5** |
| 23 | **Nutritional feed additives** | 28,29,30 | - | - | **c1, c2, c3,c4** | **d2, d4, d5** |
| 24 | **Feed additives commonly used** | 36 | **a3,a4** | **b1,b2,b4,b5,b6** | - | **d2, d4, d5,d8** |
| 25 | **-Non Nutritional feed additives**<br>**- Nanoparticles feed additives** | 31,32 | - | - | **c1, c2, c3,c4** | **d2, d4, d5** |
| 26 | **Environmental factors inducing feed deterioration**<br>**-Mycotoxins and its importance**<br>**-Pesticides** | 33,34 | - | - | **c1, c2, c3,c4** | **d2, d4, d5** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 | **-Heavy metals**<br>**-Feed manufacturing quality assurance and its monitoring** | 35,36 | - | - | **c1, c2, c3,c4** | **d2, d4, d5,d7,d8** |
| **Student activity** | | **Along the course** | **a1, a2, a3, a4,a5** | **b1,b2,b3,b4,b5,b6** | **c3, c4** | **d1, d2, d3, d4,d5.d6.d7,d8** |

Beni-Suef University
Faculty of Veterinary Medicine

# Course specification of postgraduate

## 1-Basic information

| | |
|---|---|
| **Course Code:** | M-57 |
| **Course title :** | Quality Control of feeds and its manufacturing |
| **Program title:** | MDSc. |
| **Contact hours/ week** | Lecture: 2 Practical: 2 Total: 4 |
| **Approval Date** | 9/9/2018 |

## 2-Professional information

**Overall aims of course**:

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

- Apply the analytical and evaluating approaches to knowledge in identification, inspection and examination of feedstuffs and their use in rations.
- Integrate the acquired knowledge about feedstuffs values in tables with the other related sciences and develop the relations in between.
- Identify the practical problems facing feeds industry HACCP system and their solutions.
- Properly use the suitable technologies to serve of his/her professional practices.
- Effectively communicate and lead team works.
- Make decisions depending on the available data in different professional and practical contexts.
- Show awareness of his/her role in community development and environmental conservation in the area of feed industry in the light of global and regional variables.
- Commit the moral and legal rules of nutrition specialist.
- Perform self development and continuous learning and transfer the acquired knowledge and experience to others.

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

### a- Knowledge and understanding:

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

a1. Define recent theories and knowledge in the field of feed quality evaluation and related sciences.

a2. Underline principles and morals of scientific research in the field of feed industry.

a3. Identify the legal and moral rules in different practices applied in analysis, inspection and feed evaluation.

a4- Recognize the principles and importance of high quality practices in development of feed industry.

a5. Explain the mutual influence between different professional practices and their impacts on the environment.

# Course specification of postgraduate

**b-Intellectual skills**

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

b1. Analyze and evaluate knowledge related to feed quality control and interpret it to solve the related problems.
b2. Create solution field problems of feed industry affecting animal nutrition and economics using the available data.
b3. Conduct research studies that add new knowledge to the area of feed evaluation.
b4. Illustrate different risk factors for each practice related to chemical analysis and feed manufacturing.

**C- Professional and practical skills**

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

c1. Perfectly perform different conventional and advanced techniques in the field of feed analysis for evaluation.
c2. Write and evaluate reports related to field cases of feed industry.
c3. Write and evaluate scientific papers
c4. Evaluate different available tools and methods regarding feed quality assurance and application of HACCP system.

**d- General and transferable skills**

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

d1-Properly use computer and internet skills.
d2- Work in teams and appreciate the importance of cooperation.
d3-Properly communicate with others.
d4- Enhance his/her effective presentation skills.
.

## 4-Topics and contents

| Course | Topic | Weeks | No. of hours | Lectures | Practical |
|---|---|---|---|---|---|
| (Lec. 2h./week, Pract 2h./week) | **Animal nutrition fundamentals**<br>**Composition of the animal body and its food** | 1,2 | 6 | 6 | - |
| | **Feedstuffs**<br>**- Classification of feedstuffs** | 1 | 2 | - | 2 |
| | **- Nutrition terms** | 2,3 | 4 | - | 4 |
| | **Water and its metabolism** | 3 | 2 | 2 | - |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | **Concentrates as energy sources & deleterious factors** | 4,5,6 | 6 | - | 6 |
| | **Carbohydrates and their metabolism** | 4 | 2 | 2 | - |
| | **Proteins and their metabolism** | 5 | 2 | 2 | - |
| | **Lipids and their metabolism.** | 6 | 2 | 2 | - |
| | **Plant protein sources & deleterious factors** | 7,8,9 | 6 | - | 6 |
| | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | 10 | 10 | - |
| | **-Forage and roughage** | 10,11,12 ,13 | 8 | - | 8 |
| | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14 ,15 | 8 | 8 | - |
| | **-Feed processing and manufacture** | 14,15,16 ,17 | 8 | - | 8 |
| | **Feed intake and factors affecting** | 16,17 | 4 | 4 | - |
| | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | 6 | - | 6 |
| | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | 6 | 6 | - |
| | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23 ,24,25 | 10 | - | 10 |
| | **Feeding standards and nutritional requirements** | 21,22 | 4 | 4 | - |
| | **- Animal feed safety and feed manufacturing** | 25,26 | 4 | - | 4 |
| | **Feed contaminants and its sources** | 27,28 | 4 | 4 | - |
| | **Feed additive legislation**<br>**-Feed additives**<br>**-Feed materials**<br>**-Veterinary medicinal products** | 29,30 | 4 | 4 | 2 |

# Course specification of postgraduate

| | | | | | |
|---|---|---|---|---|---|
| | **-Legislation in the USA** | | | | |
| | **Precautions for feed additives users**<br>**-Evaluating feed additives**<br>***- Evaluating feed additives at the farm level***<br>***-Evaluating feed additives at the industry level*** | 31,32,33 ,34,35 | 10 | 10 | - |
| | **-Nutritional feed additives** | 28,29,30 | 4 | - | 4 |
| | **Feed additives commonly used** | 36 | 2 | 2 | - |
| | **-Non Nutritional feed additives**<br>**- Nanoparticles feed additives** | 31,32 | **4** | **-** | 4 |
| | **Environmental factors inducing feed deterioration**<br>**-Mycotoxins and its importance**<br>**-Pesticides** | 33,34 | 4 | - | 4 |
| | **-Heavy metals**<br>**-Feed manufacturing quality assurance and its monitoring** | 35,36 | 4 | - | 4 |
| | Total | | 144 | 72 | 72 |

## 5-Teaching and learning methods

- **Lectures:**

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

- **Practical sections:**

- Identification of feedstuffs and their evaluation.
- Laboratory feed inspection and chemical analysis.
- Requirements calculation and ration formulation.

- **Self learning**: Electronic learning, Seminars, scientific search on related websites, international, national and local journals, related books in faculty library.
- **Essays and reviews**
- **Discussion groups**

## 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** |
| Written Exam | **a1 to a5** | **b1 to b4** | | |
| Practical Exam | | | **c1 to c4** | |
| Oral Exam | **a1 to a5** | **b1 to b4** | **c1 to c4** | **d1 to d4** |

### 6.2. Assessment schedules

# Course specification of postgraduate

| Method | Week(s) |
|---|---|
| Written exam | **During December** |
| Practical exam | **During December** |
| Oral exam | **During December** |
| Student activities | **Along the year** |

**6.3. Weight of assessments**

| Assessment | Weight of assessment |
|---|---|
| Writing exam | **50%** |
| Practical exam | **25%** |
| Oral exam | **25%** |
| total | 100% |

## 7- List of references

**7.1. Notes and books**

**1-Textbook of Animal and Poultry Nutrition – part 1**

**2-Practical of feedstuffs and ration formulation – part 1**

**3-Textbook of Animal and Poultry Nutrition – part 2**

**4-Practical of feedstuffs and ration formulation – part 2**

**5-Textbook of Human Nutrition and Animal Byproducts.**

**7.2. Essential books:**

**1-Cheeke , P.R.(1991): Applied Animal Nutrition, Feeds and Feeding.**
**2- 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.**
**5-Pond, W. G., D.C. Church, and K .R. Pond (1995): Basic Animal Nutrition and Feeding, 4th edition.**

**7.3. Recommended texts**

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

# Course specification of postgraduate

**Journals:**

**Journal of Nutrition**
**-Journal of Animal Science**
**-Journal of Agriculture Science**
**-Nutrition Abstracts and Reviews**
**-Journal of Poultry Science**
**-Journal of small ruminant Nutrition**
**-Veterinary Record**
**-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** **Head of Department**

**Name: Dr. Asmaa S. A. Abdel-daim** **Prof. Dr. Elham Saleh**

**Sig. :**

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

| Topics | | Wk | Knowledge and Understanding | Intellectual Skills | Practical and Professional Skills | General & Transferable Skills |
|---|---|---|---|---|---|---|
| 1 | **Animal nutrition fundamentals**<br>**Composition of the animal body and its food** | 1,2 | **a1, a2** | **b1,b2** | - | **d1, d2,d3** |
| 2 | **Feedstuffs**<br>**- Classification of feedstuffs** | 1 | - | - | **c1,c2** | **d1, d2.d4** |
| 3 | **- Nutrition terms** | 2,3 | - | - | **c1,c2** | **d1, d2** |
| 4 | **Water and its metabolism** | 3 | **a1, a2, a3** | **b1,b2,b3** | - | **d1, d2** |
| 5 | **Concentrates as energy sources & deleterious factors** | 4,5,6 | - | - | - | **d1, d2** |
| 6 | **Carbohydrates and their metabolism** | 4 | **a1, a2, a3** | **b1,b2,b3** | - | **d1, d2** |
| 7 | **Proteins and their metabolism** | 5 | **a1, a2, a3** | **b1,b2,b3** | - | **d1, d2** |
| 8 | **Lipids and their metabolism.** | 6 | **a1, a2, a3** | **b1,b2,b3** | - | **d1, d2** |
| 9 | **Plant protein sources & deleterious factors** | 7,8,9 | - | - | **c1,c2,c4** | **d1, d2, d3** |
| 10 | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | **a1, a2, a3** | **b1,b2,b4** | - | **d1, d2, d3** |
| 11 | **-Forage and roughage** | 10,11,12,13 | - | - | **c1,c2,c4-** | **d1, d2** |
| 12 | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14,15 | **a1, a2, a3** | **b1,b2,b4,** | - | **d1, d2** |
| 13 | **-Feed processing and manufacture** | 14,15,16,17 | - | - | **c1,c2,c4** | **d1, d2** |
| 14 | **Feed intake and factors affecting** | 16,17 | **a1, a2, a3** | **b1,b2,b4** | - | **d1, d2** |
| 15 | **Feedstuffs analyses** | 18,19,20 | - | - | **c1,c2,c4** | **d1, d2** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| | **-Physical inspection** | | | | | |
| 16 | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | **a1, a4,a5** | **b2,b3,b4** | - | **d3, d4** |
| 17 | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23,24,25 | - | - | **c1,c2,c4** | **d3, d4** |
| 18 | **Feeding standards and nutritional requirements** | 21,22 | **a4, a5** | **b4,b2** | - | **d3, d4** |
| 19 | **- Animal feed safety and feed manufacturing** | 25,26 | **a3,a4,a5** | **b3,b4** | - | **d3, d4** |
| 20 | **Feed contaminants and its sources** | 27,28 | **a2, a4,a5** | **b1,b2,b4** | - | **d2, d4** |
| 21 | **Feed additive legislation**<br>**-Feed additives**<br>**-Feed materials**<br>**-Veterinary medicinal products**<br>**-Legislation in the USA** | 29,30 | **a1, a2, a3,a5** | **b1,b2,b4** | - | **d2, d4** |
| 22 | **Precautions for feed additives users**<br>**-Evaluating feed additives**<br>***- Evaluating feed additives at the farm level***<br>***-Evaluating feed additives at the industry level*** | 31,32,33,34,35 | **a3,a4, a5** | **b1,b2,b4** | - | **d2, d4** |
| 23 | **Nutritional feed additives** | 28,29,30 | - | - | **c1, c2, c3,c4** | **d2, d4** |
| 24 | **Feed additives commonly used** | 36 | **a3,a4** | **b1,b2,b4** | - | **d2, d4** |
| 25 | **-Non Nutritional feed additives**<br>**- Nanoparticles feed additives** | 31,32 | - | - | **c1, c2, c3,c4** | **d2, d4** |
| 26 | **Environmental factors inducing feed deterioration**<br>**-Mycotoxins and its importance**<br>**-Pesticides** | 33,34 | - | - | **c1, c2, c3,c4** | **d2, d4,** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 | **-Heavy metals**<br>**-Feed manufacturing quality assurance and its monitoring** | 35,36 | - | - | **c1, c2, c3,c4** | **d2, d4** |
| **Student activity** | | **Along the course** | **a1, a2, a3, a4,a5** | **b1,b2,b3,b4** | **c3, c4** | **d1, d2, d3, d4** |

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

## 01-Basic information

| | |
|---|---|
| **Course Code:** | M-58 |
| **Course title :** | **Clinical Nutrition** |
| **Program title:** | Master |
| **Contact hours/ week** | Lecture: 2 Practical: 2 Total: 4 |
| **Approval Date** | 9/9/2018 |

## 2-Professional information

**Overall aims of course**:

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

1-Apply the analytical and evaluating approaches to knowledge in diagnosis, prevention and control of nutritional disorders of animal and other related sciences.

2-Integrate the acquired knowledge about clinical nutritional requirements with the other related sciences and develop the relations in between.

3-Intensively aware of the current problems facing animal clinical nutrition and recent theories illustrating NRC tables, prevention and control of nutritional problems.

4-Identify the practical problems facing animal clinical nutrition and their solutions.

5-Develop new techniques and tools to be applied in ration formulation and feed industry.

6-Properly use the suitable technologies to serve his/her professional practices.

7-Effectively communicate and lead team works.

8-Make decisions depending on the available data in different professional and practical contexts.

9-Show awareness of his/her role in community development and environmental conservation in the area of animal nutrition in the light of global and regional variables.

10-Perform self-development and continuous learning and transfer the acquired knowledge and experience to others.

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

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

### a- Knowledge and understanding:

**By successful completion of the course, the student should be able to:**

a1. Define basics of animal clinical nutrition, feed evaluation and quality control.

a2. Underline principles and morals of scientific research in the field of animal clinical nutrition.

a3. Identify technical nutritional terms, clinical situations and related parameters.

a4. Describe the principles and importance of high quality practices in development of animal feed industry.

a5. Recognize the mutual influence between different professional practices and their impacts on the environment.

a6. Identify the principals of application of di erent quality management systems in clinical nutrition sectors and practices.

### b-Intellectual skills

**By successful completion of the course, the student should be able to:**

b1. Analyze and evaluate knowledge related to animal clinical nutrition and interpret it to solve the related problems.

b2. Create solution field problems affecting animal clinical nutrition and economics using the available data.

b3. Conduct research studies that add new knowledge to the area of animal clinical nutrition.

b4. Demonstrate different risk factors for each practice related to diagnosis, prevention and control of nutritional deficiencies of animal.

### C- Professional and practical skills

**By successful completion of the course, the student should be able to:**

c1. Perfectly perform di erent conventional and advanced techniques in the eld of feeding system and ration formulation to prevent nutritional diseases.

c2. Write and evaluate reports related to animal nutrition and feeding.

c3. Write and evaluate scientific papers.

### d- General and transferable skills

**By successful completion of the course, the student should be able to:**

d1-Properly use computer and internet skills.

# Course specification

d2- Work in teams and appreciate the importance of cooperation.
d3-Properly communicate with others.
d4- Enhance his/her effective presentation skills.

## 4-Topics and contents

| Course | Topic | Weeks | No. of hours | Lectures | Practical |
|---|---|---|---|---|---|
| (Lec. 2h./week, Pract 2h./week) | **Animal nutrition fundamentals Composition of the animal body and its food** | 1,2 | 6 | 6 | - |
| | **Feedstuffs - Classification of feedstuffs** | 1 | 2 | - | 2 |
| | **- Nutrition terms** | 2,3 | 4 | - | 4 |
| | **Water and its metabolism** | 3 | 2 | 2 | - |
| | **Concentrates as energy sources & deleterious factors** | 4,5,6 | 6 | - | 6 |
| | **Carbohydrates and their metabolism** | 4 | 2 | 2 | - |
| | **Proteins and their metabolism** | 5 | 2 | 2 | - |
| | **Lipids and their metabolism.** | 6 | 2 | 2 | - |

# Course specification

| | | | | | |
|---|---|---|---|---|---|
| | **Plant protein sources & deleterious factors** | 7,8,9 | 6 | - | 6 |
| | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | 10 | 10 | - |
| | **-Forage and roughage** | 10,11,12 ,13 | 8 | - | 8 |
| | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14 ,15 | 8 | 8 | - |
| | **-Feed processing and manufacture** | 14,15,16 ,17 | 8 | - | 8 |
| | **Feed intake and factors affecting** | 16,17 | 4 | 4 | - |
| | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | 6 | - | 6 |
| | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | 6 | 6 | - |
| | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23 ,24,25 | 10 | - | 10 |
| | **Feeding standards and nutritional requirements for:**<br>**-maintenance**<br>**-growth**<br>**-fattening** | 21,22 | 4 | 4 | - |

# Course specification

| | | | | | |
|---|---|---|---|---|---|
| | **-reproduction and lactation<br>-work production<br>-wool production** | 23,24 | 6 | 6 | - |
| | **Ration formulation methods** | 25 | 2 | - | 2 |
| | **-Feeding fish and nutritional diseases** | 26 | 2 | 2 | - |
| | **Ration formulation of fish** | 27 | 2 | - | 2 |
| | **Feeding farm animals<br>-Feeding dairy cows & calves and nutritional diseases<br>-Feeding buffalos and nutritional diseases** | 26,27,28 | 6 | 6 | - |
| | **Ration formulation of dairy cattle** | 28,29 | 6 | - | 6 |
| | **-Feeding sheep & goat and nutritional diseases<br>-Feeding camel** | 29,30,31 | 6 | 6 | - |
| | **Ration formulation of sheep and goat<br>Ration formulation of camel** | 30,31 | 4 | - | 4 |
| | **-Feeding equine and nutritional diseases** | 32,33 | 4 | 4 | - |
| | **Ration formulation of equine** | 32 | 2 | - | 2 |
| | **-Feeding poultry and nutritional diseases** | 34, 35 | 4 | 4 | - |
| | **Ration formulation for poultry** | 33,34 | 4 | - | 4 |
| | **Feed additives-** | | 2 | 2 | - |

# Course specification

| | | | | | |
|---|---|---|---|---|---|
| | | 36 | | | |
| | **Environmental factors inducing feed deterioration<br>-Mycotoxins and its importance<br>-Pesticides** | 35 | 2 | - | 2 |
| | **-Heavy metals<br>-Feed manufacturing quality assurance and its monitoring** | 36 | 2 | - | 2 |
| | Total | | 144 | 72 | 72 |

## 5-Teaching and learning methods

- **Lectures:**

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

- **Practical sections:**

- Identification of feedstuffs and their evaluation.
- Laboratory feed inspection and chemical analysis.
- Requirements calculation and ration formulation.

- **Self learning**: Electronic learning, Seminars, scientific search on related websites, international, national and local journals, related books in faculty library.
- **Essays and reviews**
- **Discussion groups**

## 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** |
| Written Exam | **a1 to a6** | **b1 to b4** | | |

# Course specification

| | | | | |
|---|---|---|---|---|
| Practical Exam | | | **c1 to c3** | |
| Oral Exam | **a1 to a5** | **b1 to b4** | **c1 to c3** | **d1 to d4** |

**6.2. Assessment schedules**

| Method | Week(s) |
|---|---|
| Written exam | **During December** |
| Practical exam | **During December** |
| Oral exam | **During December** |
| Student activities | **Along the year** |

**6.3. Weight of assessments**

| Assessment | Weight of assessment |
|---|---|
| Writing exam | **50%** |
| Practical exam | **25%** |
| Oral exam | **25%** |
| total | 100% |

## 7- List of references

**7.1. Notes and books**

**1-Textbook of Animal and Poultry Nutrition – part 1**

**2-Practical of feedstuffs and ration formulation – part 1**

**3-Textbook of Animal and Poultry Nutrition – part 2**

# Course specification

**4-Practical of feedstuffs and ration formulation – part 2**

**5-Textbook of Human Nutrition and Animal Byproducts.**

**7.2. Essential books:**

**1-Cheeke , P.R.(1991): Applied Animal Nutrition, Feeds and Feeding.**
**2- 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.**
**5-Pond, W. G., D.C. Church, and K .R. Pond (1995): Basic Animal Nutrition and Feeding, 4th edition.**

**7.3. Recommended texts**

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

**Journals:**

**Journal of Nutrition**
**-Journal of Animal Science**
**-Journal of Agriculture Science**
**-Nutrition Abstracts and Reviews**
**-Journal of Poultry Science**
**-Journal of small ruminant Nutrition**
**-Veterinary Record**
**-Journal of Dairy Science**

Beni Suef University
Faculty of Veterinary Medicine

# Course specification

**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** **Head of Department**

**Name: Dr. Asmaa S. A. Abdel-daim** **Prof. Dr. Elham Saleh**

**Sig. :**

| Topics | Wk. | Knowledge and Understanding | Intellectual Skills | Practical and Professional Skills | General & Transferable Skills |
|---|---|---|---|---|---|

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | **Animal nutrition fundamentals**<br>**Composition of the animal body and its food** | 1,2 | **a1,a3** | **b2,b4** | - | **d2,d3** |
| 2 | **Feedstuffs**<br>**- Classification of feedstuffs** | 1 | - | - | **c1,c2,c3** | **d3** |
| 3 | **- Nutrition terms** | 2,3 | - | - | **c2** | **d1,d2.d3,d4** |
| 4 | **Water and its metabolism** | 3 | - | **b2,b4** | - | **d1, d2** |
| 5 | **Concentrates as energy sources & deleterious factors** | 4,5,6 | - | - | **c1,c2.c3** | **d1,d2.d3,d4** |
| 6 | **Carbohydrates and their metabolism** | 4 | **a1, a3** | **b2,b4** | - | **d1, d2** |
| 7 | **Proteins and their metabolism** | 5 | **a1,a3** | **b2,b4** | - | **d1, d2** |
| 8 | **Lipids and their metabolism.** | 6 | **a1, a3** | **b2,b4** | - | **d1, d2** |
| 9 | **Plant protein sources & deleterious factors** | 7,8,9 | - | - | **c1,c2.c3** | **d1,d2.d3,d4** |
| 10 | **Minerals- macro & microelements**<br>**- Introduction, distribution, functions**<br>**- Deficiencies, supplements** | 7,8,9,10, 11 | **a1,a2,a3,a4,a5** | **b1,b2,b3,b4** | - | **d3, d4** |
| 11 | **-Forage and roughage** | 10,11,12,13 | | - | **c1,c2.c3** | **d3, d4** |
| 12 | **Vitamins**<br>**- Vitamin and animal health**<br>**- Fat-soluble vitamins**<br>**- Water-soluble vitamins** | 12,13,14,15 | **a1,a2,a3,a4,a5** | **b1,b2,b3,b4** | - | **d1,d2.d3,d4** |
| 13 | **-Feed processing and manufacture** | 14,15,16,17 | - | - | **c1, c2, c3** | **d3, d4** |
| 14 | **Feed intake and factors affecting** | 16,17 | **a1,a3,a4,a5** | **b2,b4** | - | **d2, d4** |
| 15 | **Feedstuffs analyses**<br>**-Physical inspection** | 18,19,20 | - | - | **c1, c2, c3** | **d1,d2.d3,d4** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| 16 | **Digestion & absorption**<br>**Digestibility of feeds** | 18,19,20 | **a1,a2,a3,a4,a5** | **b b1,b2,b3,b4** | - | **d2, d4** |
| 17 | **-Microscopical examination**<br>**-Chemical analyses**<br>**-Using standard feed analyses tables** | 21,22,23,24,25 | - | - | **c1, c2, c3** | **d2, d4** |
| 18 | **Feeding standards and nutritional requirements for:**<br>**-maintenance**<br>**-growth**<br>**-fattening** | 21,22 | **a1,a2,a3,a6** | **b2,b4** | - | **d2, d4** |
| 19 | **-reproduction and lactation**<br>**-work production**<br>**-wool production** | 23,24 | **a1,a2,a3** | **b2,b4** | - | **d2, d4** |
| 20 | **Ration formulation methods** | 25 | - | - | **c1, c2, c3** | **d2, d4** |
| 21 | **Feeding fish and nutritional diseases** | 26 | **a1,a2,a3,a4,a5** | **b1,b2,b3,b4** | | **d1,d2.d3,d4** |
| 22 | **Ration formulation of fish** | 27 | | - | **c1, c2, c3** | **d2, d4** |
| 23 | **Feeding farm animals**<br>**-Feeding dairy cows & calves and nutritional diseases**<br>**-Feeding buffalos and nutritional diseases** | 26,27,28 | **a1,a2,a6a4,a5** | **b1,b2,b3,b4** | | **d1,d2.d3,d4** |
| | **Ration formulation of dairy cattle** | 28,29 | - | - | **c1,c2.c3** | **d3,d4,d5** |
| | **-Feeding sheep & goat and nutritional diseases**<br>**-Feeding camel and nutritional diseases** | 29,30,31 | **a1,a2,a3,a4,a5** | **b1,b2,b3,b4** | - | **d1,d2.d3,d4** |
| | **Ration formulation of sheep and goat**<br>**Ration formulation of camel** | 30,31 | - | | **c1,c2.c3** | **d1,d2,d3,d4** |
| | **-Feeding equine and nutritional diseases** | 32,33 | **a2,a3,a4,a5,a6** | **b1,b2,b3,b4** | - | **d1,d2.d3,d4** |
| | **Ration formulation of equine** | 32 | - | - | **c1,c2.c3** | **d1,d2,d3,d4** |
| | **-Feeding poultry and nutritional diseases** | 34, 35 | **a1,a3,a4,a5,a6** | **b1,b2,b3,b4** | - | **d1,d2,d3,d4** |

# Course specification

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Ration formulation for poultry** | 33,34 | - | - | **c1,c2.c3** | **d1,d2,d3,d4** |
| | **Feed additives-** | 36 | **a1,a2,a3** | **b1,b2,b3** | - | **d1,d2** |
| | **Environmental factors inducing feed deterioration**<br>**-Mycotoxins and its importance**<br>**-Pesticides** | 35 | - | | **c1,c2.c3** | **d1,d2,d3,d4** |
| | **-Heavy metals**<br>**-Feed manufacturing quality assurance and its monitoring** | 36 | - | | **c1,c2.c3** | **d1,d2,d3,d4** |
| **Student activity** | | **Along the course** | **a1,a2,a3,a4,a5,a6** | **b1, b2, b3,b4** | **c1,c2.c3** | **d1,d2,d3,d4** |