#### Course Title: Animal and Poultry Nutrition Biotechnology

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| **University** | **Benha** |
| **Faculty** | **Faculty of Agriculture** |
| **COURSE SPECIFICATIONS:** | |
| Program of which the course is given | Agricultural Biotechnology |
| Major or Minor element of Program |  |
| Departments offering the Program | Animal Production Department |
| Department offering the course | Animal Production Department |
| Academic year / Level | 3rd year / 2nd level |
| Date of specification approval |  |

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| **A- BASIC INFORMATION** | |
| Title | Animal and Poultry Nutrition Biotechnology |
| Code | AP0306 |
| Credit Hours | 4 Hours/ week |
| Lecture | 2 Hours / week |
| Practical | 2 Hours / week |
| Total: | 56Hours/ semester |

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| **B- PROFESSIONAL INFORMATION** |
| **1 – OVERALL AIMS OF COURSE** |
| * To update the student with the new materials used in animal and poultry nutrition * To understand how to formulate diets with low cost. * To know feed and the fundamentals of scientific research |

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| **2 – Intended Learning Outcomes of Course (ILOs)** |
| **A. Knowledge and Understanding:** |
| ***By the end of the course, students should:***   * Understanding the fundamentals of nutrition which the using of the end of course * Understanding the definition of new ingredient (animal and poultry). |

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| B. Intellectual Skills: |
| ***Successful completion of this course will allow students to:***   * Solve any problems of animal and poultry nutrition. * Choose the best ingredients for animals and poultry diets |

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| C. Professional and Practical Skills: |
| * Measure, diagnose and solve problems of animal and poultry nutrition. * Applied practice of animal and poultry nutrition for the scientific research and farms. * Describe the nutrition requirements of animal and poultry |

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| D. General and Transferable Skills: |
| * Learn how work in team. * Learn treatment of computer. * Use technological knowledge to solve any problems of field. |

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| 3. CONTENTS | | | |
| **Topic** | **No. of hours** | **Lectures** | **Practical** |
| Fundamentals of animal nutrition and kinds of feedstuffs | 4 | 1 | 1 |
| Un-conventional feedstuffs and biosynthesis of nutrition | 4 | 1 | 1 |
| Animal nutrition requirements | 4 | 1 | 1 |
| Ration diet for different stages of animal growth | 4 | 1 | 1 |
| Feed manufacture | 4 | 1 | 1 |
| Poultry requirements of carbohydrates and lipids | 4 | 1 | 1 |
| Poultry requirements of nutrients and vitamins for energy and protein production | 4 | 1 | 1 |
| Poultry feed additives and regulators | 4 | 1 | 1 |
| Metabolizable energy efficiency for maintenance, meat production | 4 | 1 | 1 |
| Metabolizable energy efficiency for milk and egg production | 4 | 1 | 1 |
| Calculating maintenance and productive requirements | 4 | 1 | 1 |
| Protein requirements for maintenance and different productions | 4 | 1 | 1 |

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| 4. TEACHING AND LEARNING METHODS |
| 1. The main subject areas are covered in the lectures (see syllabus Plan). 2. Several student seminar sessions give the opportunity for students to bring questions or discuss any aspects of the course with the tutor. 3. Students are given a topic to research in small groups which they report as an oral presentation. Collective feedback on the strengths and weaknesses of the presentations are provided. |

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| 5. STUDENT ASSESSMENT METHODS |
| ***Students will be evaluated by attendance, fulfillment and effort in exercises and presentations, and examination grades:***  1) Laboratory work: to assess the ability of students to understand and perform small laboratory experiments. |

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| 6. ASSESSMENT SCHEDULE | | |
| No | Assessment | **Week No.** |
| 1 | Periodical exam | 4, 8, 12 |
| 2 | Practical exam | 13 |
| 3 | Oral exam | 13 |
| 4 | Final exam | 14 |

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| 7. WEIGHTING OF ASSESSMENT | | |
| No | Assessment | **%** |
| 1 | Periodical exam | 15% |
| 2 | Practical exam | 15% |
| 3 | Oral exam | 10 % |
| 4 | Final exam | 60 % |
| TOTAL | | 100 % |

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| 8. LIST OF REFERENCES |
| **Cheeke, P.R. 2004.** Applied animal nutrition. 3rd Ed. Prentice Hall Inc., NY, USA  **Gransworthy P.C., Wiseman J. 2009**. Recent Advances in Animal Nutrition, Recent Advances in Animal Nutrition series. Nottingham University Press, pp 374 pages.  **Philip C. Garnsworthy, Julian Wiseman 2006**. Recent developments in Non-Ruminant Nutrition. Nottingham University Press, pp 479 pages.  **Theodorou, M. K. and France J. 2000**. Feeding systems and feed evaluation models. CABI Publishing Home, Wallingford, UK. Pp 481 pages.  Wallace R. John and Chesson, Andrew 2008. Biotechnology in Animal Feeds and Animal Feeding. John Wiley & Sons. |

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| 9. FACILITIES REQUIRED FOR TEACHING AND LEARNING |
| 1. Teaching aids/ materials: e.g. boards – overhead projector – data-show projector – stationary.. etc. 2. Teaching room/hall. 3. Computers. 4. Facilities for site visits etc., which are necessary for teaching the course. |

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| **Course Coordinators:** | **Prof. Dr. Gamal Aly El-Deen El-Sayaad**  **Prof. Dr. Mohamed Mohamed Abdellah** |
| **Date: / / 2015** | |