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| **Elective courses**  **It is divided into five levels as follows, and the student chooses one subject from each level**  **First level:** | | | | | | | |
| **Course no.** | **Course name** | **No. of credit hours** | | **Total** | **Registration requirements** | **Written exam time** | **The great end of the score** |
| **Theoretical** | **Practical** |
| E 01 | الاقتصاد البيطرى و تسويق الدواجن  Vet. economics and poultry marketing | 1 | - | 1 | - | 2 | 50 |
| E 02 | القانون البيطرى و حمايه المستهلك  Veterinary Laws and consumer protection | 1 | - | 1 | - | 2 | 50 |

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| Title: Veterinary Economics & Marketing | Credit hours | |
| Code Number: E01 | Lectures | Practical |
| Prerequisite courses: | 1 |  |
| Course Contents:   * Introduction about veterinary economics and the importance of economics in veterinary medicine * Pricing * The business of veterinary practice. * Management in a veterinary setting. * Veterinary marketing * Production function theory * Costs of production * Economic and productive efficiency of animal production farms * The economic justification of diseases control * Methods used for assessing the economic benefits of diseases control. * Farm records and accounts. * Depreciation * Position of animal farms and their requirements   Part II   * Large and small animal problems * Density problem and its economic importance. * Ununiformity and weight disturbances of breeder flocks and their economic importance. * Economics of drug treatment. * Economic benefits to the individual farmer from mastitis control. * Is bigger better * Economic importance of tuberculosis and brucellosis among cattle and buffaloes. * Culling and costs of diseases in dairy herds. * Surgical affections of equine limbs with special reference to their economic losses. * Management quality. * Judgment on the farm income statement. * Animal and poultry projects: * Feasibility studies of broiler projects.   Feasibility studies of breeding fresian cattle for milk production. | | |

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| Title: Veterinary Laws, Consumer protection | Credit hours | |
| Code Number: E 02 | Lectures | Practical |
| Prerequisite courses: | 1 |  |
| Course Contents:  An Overview of the Egyptian code and laws for veterinary professions and regulations. Animal treatment, veterinary clinics, housing, animal experiments regulations.  The United Nations Guidelines for consumer protection. Consumer Protection Agencies. International food law. Food legislation (Regulation of food packaging, food additives, food sanitation, regulation of Meat, eggs, fish, Poultry, milk, dairy products).Regulation of imports and exports. Regulation of GMO’s food. Application of risk assessment in food regulation. | | |

**Second level:**

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| **Course no.** | **Course name** | **No. of credit hours** | | **Total** | **Registration requirements** | **Written exam time** | **The great end of the score** |
| **Theoretical** | **Practical** |
| E 03 | اداره منشأت الدواجن  Management of poultry establishments | 1 | - | 1 | - | 2 | 50 |
| E 04 | التلوث البيئى و أثره على سلامه الغذاء  Environmental pollution and food safety | 1 | - | 1 | - | 2 | 50 |

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| Title: Poultry establishments management | Credit hours | |
| Code Number: E 03 | Lectures | Practical |
| Prerequisite courses: | 1 | 1(2) |
| Course Contents:.  Poultry housing regulations, housing temperature, humidity, poultry watering, feeding , housing tools and disinfection, | | |

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| Title: Environmental contaminants and Food safety | Credit hours | |
| Code Number : E 04 | Lectures | Practical |
| Prerequisite courses: | 1 | 1(2) |
| Course Contents:  1.Food safety and hazard in food.  2. Biological hazards (Bacteria and its toxins, Viruse, Parasite).  3. Chemical hazards (Mycotoxins, plant toxins and fish toxins).  4. Non biological contaminants (contaminants from food contact materials).  5. Environmental contaminants (Dioxin and heavy metals ).  6. Veterinary residues (antibiotic and hormones)  7. GMPs and Government regulations.  8. Veterinary products: residues and resistant pathogens. | | |

**Fourth level:**

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| Course no. | Course name | No. of credit hours | | Total | Registration requirements | Written exam time | The great end of the score |
| Theoretical | Practical |
| E.05 | مبادىء الصحه المهنيه  OCUPATIONAL HEALTH | 1 | 2 | 2 | - | 2 | 50 |
| E.06 | نظم إدارة الجودة  Quality management systems | 1 |  | 1 |  | 2 | 50 |
| E.07 | FEED ADDITIVES | 1 | 2 | 2 |  | 2 | 50 |

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| Title: OCUPATIONAL HEALTH | Credit hours | |
| Code Number: E 05 | Lectures | Practical |
| Prerequisite courses: | 1 | 1(2) |
| Course Contents:.  Roles for biosecurity in poultry clinics, decontamination of poultry carcasses, disinfection of clinics | | |

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| Title: Quality management systems | Credit hours | |
| Code Number: E 06 | Lectures | Practical |
| Prerequisite courses: | 1 |  |
| Course Contents:.  Chicks housing charts, medication charts, vaccination charts, biosecurity checklists, disinfection programs, decontamination procedures. | | |

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| Title: Food Additives | Credit hours | |
| Code Number: E07 | Lectures | Practical |
| Prerequisite courses: | 1 | 1(2) |
| Course Contents:  . Food Additives  ○ Antioxidants, Sweeteners, Flavourings, Colours  ○ Antimicrobial preservatives, Enzymes, Nutritive additives (Vitamins & Minerals)  ○ Emulsifiers, Bulking agents, pH control agents  ○ Antifoams and release agents, Flour improvers and raising agents, Gases, Chelating agents | | |

**Fifth level:**

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| Course no. | Course name | No. of credit hours | | Total | Registration requirements | Written exam time | The great end of the score |
| Theoretical | Practical |
| E.08 | DETOXIFICATION OF MYCOTOXINS | 1 | 2 | 2 |  | 2 | 50 |
| E.09 | التطهير فى منشئات الدواجن  DISINFECTION IN POULTRY PREMISES | 1 | 2 | 2 |  | 2 | 50 |
| E 10 | المتبقيات فى الاغذيه  Food residues | 1 | - | 1 | - | 2 | 50 |

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| Title: DETOXIFICATION OF MYCOTOXINS | Credit hours | |
| Code Number: E08 | Lectures | Practical |
| Prerequisite courses: | 1 | 1(2) |
| Course Contents:  . preservation of poultry ration,  - Chemical detoxification  Physical detoxification- | | |
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| Title: DISINFECTION IN POULTRY PREMISES | Credit hours | |
| Code Number: E 9 | Lectures | Practical |
| Prerequisite courses: | 1 | 1 (2) |
| Course Contents:  Cleaning of poultry houses, Types of disinfectants, Methods of disinfection, validity of disinfectants,  Suitable disinfections for different diseases. | | |

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| Title: Food residues | Credit hours | |
| Code Number: E 10 | Lectures | Practical |
| Prerequisite courses: | 1 | 1 (2) |
| Course Contents:  Veterinary Drug Residues   * Anti-Helmintics, Antibiotics, Coccidio-stats, Growth Promoters and Hormones. * Other Contaminants   ○ Pesticides, Trace elements, Mycotoxins, Tranquillizers, Probiotics, etc. | | |