**Course Curricula and Syllabus for PhD Degree**

**Department of Animal Breeding and Genetics**

**Bangladesh Agricultural University**

**Mymensingh**

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| --- | --- | --- | --- |
| **April-September (Summer) Semester** | | | |
| **A: Compulsory Courses (Credit 9)** | | |  |
| **Course Code** | **Course Title** | | **Credit** |
| ABG 701 | Advanced Animal Genetics | | 3 |
| ABG 703 | Genetic Evaluation and Selection | | 3 |
| ABG 705 | Advanced Animal Reproduction | | 3 |
|  |  | |  |
| **B: Elective Courses (2/4 Credits)** | | |  |
| **Course Code** | **Course Title** | | **Credit** |
| ABG 707 | Research Methodology and Scientific Writing | | 3 |
| ABG 709 | Herd Fertility and Reproductive Management | | 3 |
| ABG 523 | Molecular Cell and System Biology | | 2 |
|  |  | |  |
| **October- March (Summer) Semester** | | |  |
| **A: Compulsory course (Credit 9)** | | |  |
| **Course Code** | **Course Title** | | **Credit** |
| ABG 711 | Applied Genomics and Genetic Engineering | | 3 |
| ABG 713 | Stock Development and Usage | | 3 |
| ABG 715 | Advanced Assisted Animal Reproductive Technologies | | 3 |
| **B: Elective Courses (2/4 Credits)** | | |  |
| **Course Code** | **Course Title** | | **Credit** |
| ABG 717 | Methods and Tools in Genetics and Bioinformatics | | 3 |
| ABG 719 | Animal Data Analysis | | 3 |
| ABG 513 | Stem Cells and Reprograming | | 2 |
| ABG 527 | Developmental and Regulatory Biology | | 2 |
|  | | | |
| Seminar (Two) | |  | 4 (S/U) |
| Research Reports (End of first and third year) | |  | 4 (S/U) |
| Research | |  | 23 (S/U) |
| Dissertation evaluation | |  | 15 (S/U) |
| Dissertation defense | |  | 6 (S/U) |
| **GRAND TOTAL** | |  | 76 |

**S/U where S=Satisfactory and U=Unsatisfactory**

**Course Curricula and Syllabus for PhD Degree**

**Department of Animal Science**

**Bangladesh Agricultural University**

**Mymensingh**

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| **April – September Semester** | | |
| **A: Compulsory Courses (9 Credits)** | | |
| **Course Code** | **Course Title** | **Credit** |
| AS 701 | Beef Cattle Enterprise | 3 |
| AS 703 | Advanced Buffalo Production | 3 |
| AS 705 | Livestock Research Methodology | 3 |
| **B: Elective Courses (2/4 Credits)** | | |
| **Course Code** | **Course Title** | **Credit** |
| AS 713 | Hide and Skin Processing | 2 |
| AS 715 | Livestock Policy and Act | 2 |
| AS 717 | Animal Farm Practices and Food Safety | 2 |
| AS 719 | Rumen Ecology and Environment | 2 |
| AS 521 | Cell and Muscle Biology | 2 |
| ABG 727 | Developmental and Regulatory Biology | 2 |
| **October – March Semester** | | |
| **A: Compulsory Courses (9 Credits)** | | |
| **Course Code** | **Course Title** | **Credit** |
| AS 707 | Small Ruminant Production | 3 |
| AS 709 | Meat Processing and Industry | 3 |
| AS 711 | Animal Waste Recycling and Environment | 3 |
| **B: Elective Courses (2/4 Credits)** | | |
| **Course Code** | **Course Title** | **Credit** |
| AS 721 | Wool Science and Technology | 2 |
| AS 723 | Animal Welfare and Ethics | 2 |
| AS 725 | Zoo and Laboratory Animal Management | 2 |
| AS 727 | Livestock and Climate Change | 2 |
| AN 719 | Modeling Feeding and Nutritional Management of Beef Cattle | 2 |
|  | | |
| Seminar (Two) | | 4 (S/U) |
| Research Reports (End of first and third year) | | 4 (S/U) |
| Research | | 23 (S/U) |
| Dissertation evaluation | | 15 (S/U) |
| Dissertation defense | | 6 (S/U) |
| **GRAND TOTAL** | | 76 |

**S/U where S=Satisfactory and U=Unsatisfactory**

**Course Curricula and Syllabus for PhD Degree**

**Department of Animal Nutrition**

**Bangladesh Agricultural University**

**Mymensingh**

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| **April – September Semester** | | |
| **A: Compulsory Courses (9 Credits)** | | |
| Course Code | Course Title | Credit |
| AN 701 | Metabolism of Nutrients | 3 |
| AN 703 | Laboratory Procedure in Animal Nutrition Research | 3 |
| AN 705 | Animal Feed Contamination and Product Quality | 3 |
| **B:Elective Courses (2/4 Credits)** | | |
| Course Code | Course Title | Credit |
| AN 713 | Scientific Writing and Presentation | 2 |
| AN 715 | Networking for Sustainable Livestock Database Development | 2 |
| AN 717 | Modeling Feeding and Nutritional Management of Milch Cattle | 2 |
| AM 505 | Supply Chain Management in Agribusiness | 3 |
| AAS 605 | Advanced Research Methodology | 3 |
| FPM 619 | Life Cycle Assessment of Agricultural Systems | 2 |
| **October– March Semester** | | |
| **A: Compulsory Courses (9 Credits)** | | |
| Course Code | Course Title | Credit |
| AN 707 | Nutritional Dynamics of Rumen Efficiency | 3 |
| AN 709 | Repercussions of Nutrition on the Environment and Animal Health | 3 |
| AN 711 | Mathematical Modelling in Animal Nutrition Studies | 3 |
| **B: Elective Courses (Credits 2/4)** | | |
| AN 719 | Modeling Feeding and Nutritional Management of Beef Cattle | 2 |
| AN 721 | Digestive Dynamics of Non-ruminant Nutrition | 2 |
| AN 723 | Phytochemicals in Animal Nutrition |  |
| AN 725 | Livestock Policy and Feed Act | 2 |
| AAS 617 | Design of Agricultural Experiments and analysis | 3 |
| ENVSC 609 | Climate Change: Science, Impacts and Solutions | 3 |
| ENVSC 617 | GIS, Climate Modeling and Geographic Mapping | 3 |
|  | | |
| **Seminar (Two)** | | 4 (S/U) |
| Research Reports (End of first and third year) | | 4 (S/U) |
| Research | | 23 (S/U) |
| Dissertation evaluation | | 15 (S/U) |
| Dissertation defense | | 6 (S/U) |
| **GRAND TOTAL** | | 76 |

**S/U where S=Satisfactory and U=Unsatisfactory**

**Course Curricula and Syllabus for PhD Degree**

**Department of Dairy Science**

**Bangladesh Agricultural University**

**Mymensingh**

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| **April – September Semester** | | | |
| **A: Compulsory Courses (9 Credits)** | | | |
| Course Code | Course Title | | Credit |
| DS 601 | Advanced Dairy Cattle Production | | 3 |
| DS 603 | Dairy Buffalo and Small Ruminant Milk Production | | 3 |
| DS 605 | Sustainable Dairy Farming and Business Management | | 3 |
| **B: Elective Courses (2/4 Credits)** | | | |
| Course Code | Course Title | | Credit |
| DS 613 | Dairy Research Ethics and Methodology | | 3 |
| DS 615 | Advanced Dairy cattle Feeds and Fodder | | 3 |
| DS 617 | Big Data and Precision Dairy Farming | | 3 |
| DS 619 | Dairy Policy, Business and Entrepreneurship | | 3 |
|  |  | |  |
| **October − March Semester** | | | |
| **A: Compulsory Courses (9 Credits)** | | | |
| Course Code | Course Title | | Credit |
| DS 607 | Industrial Dairy Chemistry and Food Safety | | 3 |
| DS 609 | Microbiology and Biotechnology in Dairying | | 3 |
| DS 613 | Dairy Processing Plant and Product Manufacture | | 3 |
| **B: Elective Course (2/4 Credits)** | | | |
| Course Code | Course Title | | Credit |
| DS 621 | Dairy Supply Chain and Value Chain Management | | 3 |
| DS 623 | Quality Assurance, Safety and Compliance in Dairy Industry | | 3 |
| DS 625 | Advanced Analytical Techniques for Dairy Research | | 3 |
|  | | | |
| Seminar (Two) | | 4 (S/U) | |
| Research Reports (End of first and third year) | | 4 (S/U) | |
| Research | | 23 (S/U) | |
| Dissertation evaluation | | 15 (S/U) | |
| Dissertation defense | | 6 (S/U) | |
| **GRAND TOTAL** | | 76 | |

**S/U where S=Satisfactory and U=Unsatisfactory**

**Course Curricula and Syllabus for PhD Degree**

**Department of Poultry Science**

**Bangladesh Agricultural University**

**Mymensingh**

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| **April-September Semester** | | | |
| **A: Compulsory Courses (9 Credits)** | | | |
| **Course Code** | **Course Title** | | **Credit** |
| PS 701 | Advanced Biotechnology in Poultry Nutrition | | 3 |
| PS 703 | Study Design and Research Methods in Poultry Science | | 3 |
| PS 705 | Advanced Avian Reproductive Biotechnology | | 3 |
| **B: Elective Course (2/4 Credits)** | | | |
| **Course Code** | **Course Title** | | **Credit** |
| PS 713 | Environmental Aspects in Poultry Production | | 2 |
| PS 715 | Poultry Processing and Value Addition | | 2 |
| PS 717 | Biometry in Poultry Science | | 2 |
| PS 719 | Poultry Feed and Ingredient Quality Assurance | | 2 |
| BMB 612 | Advanced Animal Biochemistry | | 2 |
| AM 505 | Supply Chain Management in Agribusiness | | 3 |
| **October-March Semester** | | | |
| **A: Compulsory Courses (9 Credits)** | | | |
| **Course Code** | **Course Title** | | **Credit** |
| PS 707 | Grandparent and Parent Stock Management | | 3 |
| PS 709 | Product Quality and Food Safety | | 3 |
| PS 711 | Incubation Science and Hatchery Practices | | 3 |
| **B: Elective Course (2/4 Credits)** | | | |
| **Course Code** | **Course Title** | | **Credit** |
| PS 721 | Advances in Poultry Welfare | | 2 |
| PS 723 | Comparative Nutrition for Specialized Poultry | | 2 |
| PS 725 | Omics in Poultry Science | | 2 |
| PS 727 | Analytical Techniques and Laboratory Management | | 2 |
| AS 721 | Cell and Muscle Biology | | 2 |
| BIOTECH 608 | Animal Biotechnology | | 2 |
|  | | | |
| Seminar (Two) | |  | 4 (S/U) |
| Research Reports (End of first and third year) | |  | 4 (S/U) |
| Research | |  | 23 (S/U) |
| Dissertation evaluation | |  | 15 (S/U) |
| Dissertation defense | |  | 6 (S/U) |
| **GRAND TOTAL** | |  | 76 |

**S/U where S=Satisfactory and U=Unsatisfactory**