Bangladesh Agricultural University

Mymensingh

Postgraduate Programmes

Committee for Advanced Studies and Research

Computer Graphics

Zugal Kanti Roy

Cover Designed

M Golam Shahi Alam

Published by

Coordinator
Committee for Advanced Studies and Research
Bangladesh Agricultural University
Mymensingh-2202.
Phone : 091-67425
Fax : +880-91-67425
E-mail : dpgs_bau@yahoo.com
Website : www.bau.edu.bd

Printed by

Tithy Offset Printing Press
14, Amritababu Raod (Golpukur Par)
Mymensingh
Phone : 091-55168
Mobile : 01819-456353

August 2012

List of Contents

Message

Bangladesh Agricultural University (BAU) is a remarkable place, with expertise across a wide range of agricultural disciplines. Our academic staff is leaders in their fields, and is committed to develop ideas, knowledge and understanding. BAU is not just a home for agricultural education, but a diverse university faculty, with expertise addressing challenges of providing sustainable food and nutrition security through teaching and research.

The Committee for Advanced Studies and Research (CASR) coordinates postgraduate studies at BAU and aspires to excellence. It has been engaged in producing quality postgraduates with MS, MBA and PhD degrees and in promoting need-based and original research in all branches of agricultural sciences. The CASR has successfully facilitated postgraduate research and thus contributed to building research capability through the institution of a mix of advanced courses, provision of excellent research and library facilities, as well as teaching and supervision by highly qualified and experienced academic staff.

I am very happy to learn that the CASR is going to publish a postgraduate Booklet containing information of its academic and research activities, which I believe will be of immense use to the teachers, students, administrators and policy makers.

I applaud the considerable effort that has been made by the CASR to provide a conducive environment for postgraduate studies.

Professor Dr. Md. Rafiqul Hoque
Vice-Chancellor

Foreword

This Booklet focuses on research and study opportunities at postgraduate level in Bangladesh Agricultural University (BAU). The Committee for Advanced Studies and Research, set up 1963, provides information on the facilities and services available to BAU postgraduate students. This is an innovative institution with a strong commitment to excellence. It is committed to high-quality research that contributes practical solutions to agricultural sciences. We provide the widest range of postgraduate degree programmes and have a reputation for excellence across our six faculties, one institute and a rapidly-growing number of specialised research groups. We are a dynamic hub for research with strong public and private research support and participation. Our academic staff collaborate with partners across Bangladesh and internationally.

This document provides information about the ordinances for MS, MBA and PhD degrees including curricula of 44 academic departments and the Institute of Agribusiness & Development Studies. I believe this booklet is a useful guide to those interested in our postgraduate study programmes. Postgraduate education at BAU aims to impart specialised knowledge and skill leading to a high level of expertise in a specific field of veterinary science, agriculture, animal husbandry, agricultural economics & rural sociology, agricultural engineering & technology, fisheries or other frontier sciences.

With unrivalled support and experience gained through course work and research, postgraduate students can fulfill their dreams of a rewarding carrier that contributes to a sustainable future.

G. S. Alam

Professor M. Golam Shahi Alam
Co-ordinator

Introduction

The Bangladesh Agricultural University (BAU), Mymensingh came into being in 1961-1962 following the recommendations of the Commission on National Education and Food and Agriculture Commission. Its main function is to provide instruction in agriculture and allied subjects, at undergraduate and postgraduate levels and to undertake research and the advancement and dissemination of knowledge in those subjects. The location of the university campus is an ideal one with the river Brahmaputra running almost parallel to the university campus on the east, and rural areas on western and southern side. The campus lies about 5 km from Mymensingh and 120 km from Dhaka. The land around the campus offers commendable possibilities of experimentation and research. The nearby rural area offers potential for extension work. The Brahmaputra water washing the eastern boundary of the campus serves as a natural laboratory for practical training in fisheries. The campus has a post office, banks and a shopping centre (Kamal Ranjit Market). The Bangladesh Institute of Nuclear Agriculture (BINA) and the Bangladesh Fisheries Research Institute (BFRI) with the Aquaculture Experiment Station are within the university campus.

The university exercises its authority in administrative and academic matters through the syndicate and the academic council, the vice-chancellor being its chief executive and academic officer.

Genesis and Establishment

BAU was established as the nation's only university of its kind in 1961-1962 following recommendations by the Commission on National Education and the Food and Agriculture Commission in 1959. The scheme for the establishment of BAU was finalized on 8 June 1961 and its ordinance was promulgated on 18 August 1961. With the appointment of its first vice-chancellor, the university formally came into existence on 2 September 1961, with the College of Veterinary Science and Animal Husbandry at Mymensingh as its nucleus. The main task of the university is to raise the quality and standard of higher agricultural education and to produce first rate agriculturists, agricultural scientists and technologists for shouldering the responsibilities of agricultural development of the country.

Location

The university campus, with an area of 437.07 hectare (1080 acres) is located in scenic rural surroundings on the western bank of the old Brahmaputra River, 5 km south of Mymensingh and 120 km north from Dhaka, the capital of Bangladesh. The campus is made up of a series of academic, administrative and residential buildings and a number of experimental farms, gardens and related facilities.

Missions

The working missions of the university are:

i) to provide higher educational foundation, which will enable students to embark on areas of advanced professional specialisation, or to begin research and/or academic careers throughout the world;

ii) to advance the frontiers of agricultural sciences and to significantly improve the quality of agricultural graduates;

iii) to provide higher learning in all branches of agricultural sciences as a profession-based education;

iv) to conduct basic and applied research on agricultural problems faced by farmers and agro-industrialists with a view to recommending measures in dealing with them;

v) to organize and supervise extension and related activities;

(vi) to provide training for personnel of public and private organisations and for farmers and farm-leaders on agricultural production and rural development; and

vii) to provide facilities for bilateral and multilateral cooperation and collaboration with organisations within and outside Bangladesh.

Function and Authority:

The university exercises its authority in administrative and academic matters through Syndicate and Academic Council, Finance Committee, Planning & Development Committee, Faculty Committees, Committee for Advanced Studies & Research and Boards of Studies. The vice-chancellor is the chief executive of the university. He is responsible for conducting its overall affairs within the framework and policy directives of the syndicate and the government.

Academic Programmes:

The university started 1961 with only 23 teaching departments grouped under two faculties, Veterinary Science and Agriculture, having 30 teachers and 444 students. A third faculty, Animal Husbandry, was added a few months after the establishment of the university. The Faculties of Agricultural Economics & Rural Sociology, Agricultural Engineering & Technology and Fisheries started functioning from 1963-1964, 1964-1965 and 1967-1968, respectively. At Present, the university has postgraduate programmes in 43 teaching departments of six faculties and another programme on MBA in Agribusiness has been introduced recently by the newly established Institute of Agribusiness and Development Studies.

The faculties and their departments are:

Faculty of Veterinary Science: Departments of Anatomy & Histology, Microbiology & Hygiene, Pathology, Parasitology, Pharmacology, Physiology, Medicine, Surgery & Obstetrics.

Faculty of Agriculture: Departments of Agronomy, Soil Science, Entomology, Horticulture, Plant Pathology, Crop Botany, Genetics & Plant Breeding, Agricultural Extension Education, Agricultural Chemistry, Biochemistry & Molecular Biology, Physics Agroforestry, Biotechnology, Environmental Science, Seed Science & Technology.

Faculty of Animal Husbandry: Departments of Animal Breeding & Genetics, Animal Science, Animal Nutrition, Dairy Science, Poultry Science.

Faculty of Agricultural Economics & Rural Sociology: Departments of Agricultural Economics, Agricultural Finance, Agricultural Statistics, Agribusiness & Marketing, Rural Sociology.

Faculty of Agricultural Engineering & Technology: Departments of Farm Structure & Environmental Engineering, Farm Power & Machinery, Irrigation & Water Management, Food Technology & Rural Industries, Computer Science & Mathematics.

Faculty of Fisheries: Departments of Fisheries Biology & Genetics, Aquaculture, Fisheries Management, Fisheries Technology.

At the Master's (MS) degree level, 43 teaching departments conduct course-credit and research-based programmes in the three consecutive semesters leading to 44 MS degrees: MS in Anatomy, Microbiology, Veterinary Public Health & Food Hygiene, Parasitology, Medicine, Pathology, Physiology, Pharmacology, Surgery, Theriogenology, Agronomy, Soil Science, Crop Botany, Plant Pathology, Horticulture, Entomology, Agricultural Extension Education, Agricultural Chemistry, Biochemistry & Molecular Biology, Genetics & Plant Breeding, Agroforestry, Biotechnology, Environmental Science, Seed Science & Technology, Animal Breeding & Genetics, Animal Nutrition, Animal Science, Poultry Science, Dairy Science, Agricultural Economics (Agribusiness & Marketing), Agricultural Economics (Finance), Agricultural Economics (Production Economics), Agricultural Statistics, Rural Sociology, Irrigation & Water Management, Farm Power & Machinery, Farm Structure, Food Technology, Food Engineering, Computer Science, Fisheries Biology & Genetics, Aquaculture, Fisheries Management, Fisheries Technology.

In addition, Institute of Agribusiness and Development Studies also offer MBA in Agribusiness.

Doctoral programmes are of full-time three-year duration, extendable up to a maximum of six years, of which two consecutive years are to be spent in this university. At present, PhD programmes are ongoing in 39 departments. The Committee for Advanced Studies and Research (CASR) is responsible for development, coordination, supervision and monitoring of postgraduate study programmes.

Admission Requirements

MS courses: Candidates for admission into MS study programme must possess a Bachelor of Science or DVM degree from this university or an equivalent degree from other university including an MBBS degree. Candidates having passed a Bachelor degree in credit-course system must have secured a minimum GPA of 2.5 out of 4.0 or 3.5 out of 5.0 and a B grade/50% marks in annual system in the pre-requisite course(s) on average. The board of studies of the concerned department will determine the pre-requisite course(s) in which the candidate must have B grade on an average. The eligibility of a candidate having degree from other university shall be assessed by an eligibility committee consisting of the proposed supervisor, the concerned head of the department and the Coordinator, CASR. The Coordinator, CASR will act as the convener of the committee.

A candidate for admission into MS programmes for specialisation in Agricultural Extension Education, Agricultural Statistics, Biochemistry & Molecular Biology and Rural Sociology must have studied and passed the relevant paper/course(s) carrying at

least four credit hours (150 marks in annual system), at the Bachelor of Science/DVM degree of this university or an equivalent degree including MBBS from other recognized institutions.

An in-service candidate, if selected for admission, must obtain necessary clearance and study leave or deputation for the stipulated period from his/her employer to be eligible for admission.

Candidates shall apply for admission in prescribed form of the university. Each student shall fill in five prescribed enrolment cards for each semester to have a coded roll number to carry through all semesters in order to maintain records in the offices of the Coordinator, CASR; the controller of examinations; the head of the department; the registrar; and the student himself/herself. Admission of students into MS study programme shall be approved by the Coordinator, CASR on recommendation of the respective board of studies on the basis of academic performance and satisfactory conduct at the Bachelor degree study/in a service. The number of students to be admitted in a department in any particular semester will be decided by the respective board of studies on the basis of availability of teaching and research facilities in the department. Candidates for admission into MS/MBA degree programme shall get themselves admitted in the months of July and January in a year and shall pay the necessary fees including examination fees as per university rules. An admitted student to a subject in particular semester (clauses 2.10 & 3.1) may be allowed new admission to another subject for academic reasons, in the next semester. In such case he/she will have to take permission from the existing supervisor and head of the relevant department. This can be exercised for one time only. It is resolved that the second Master's degree admission to the different courses in this university will not be allowed as a general policy. However, in some exceptional cases, the CASR will consider the merit of individual case for such admission on the basis of the recommendations of their respective appointing authorities.

PhD programme : An applicant for admission to a course of studies for the PhD degree shall possess at least one 1st class/Grade B in either Bachelor degree or Masters degree with thesis from this university having at least Second Class/Grade B^- or an equivalent degree from any other university recognized by CASR, and at least one year experience in teaching /research/extension with one publication. However, requirement of the 1st class may be relaxed to 2nd class if an applicant possesses a minimum of five years experience in research/ teaching/ extension with at least three publications in recognized scientific journals. An applicant having 1st class with distinction either in Bachelor or Masters Degree (A^+/GPA=4) is eligible for admission into PhD programme without any experience and publication.

Accommodation: We grantee an offer of accommodation to all new, single (male) postgraduate students. Although, female students of other universities, regrettably recommend applying, as they will be made an offer if sufficient room are available.

Our university accommodation for students is not self-catered with the exception of newly build self-catered Nuclear Scientist Dr. M. A. Wazed Mia PhD Dormitory where 24 single en-suit rooms, only moments away from the university central area, but this is only available on a first-come, first served basis.

Committee for Advanced Studies and Research

1.	Professor Dr. Md. Rafiqul Hoque Vice-chancellor	Chairman
2.	Professor Dr. Lutful Hassan Department of Genetics and Plant Breeding	Member
3.	Professor Dr. Md. Jasimuddin Khan Department of Animal Nutrition	Member
4.	Professor Dr. Mohammad Mujaffar Hossain Department of Animal Science	Member
5.	Professor Md. Ali Akbar Department of Agribusiness and Marketing	Member
6.	Professor Dr. Kirtunia Juran Chandra Department of Aquaculture	Member
7.	Professor Dr. Md. Abul Khair Chowdhury Department of Agricultural Chemistry	Member
8.	Professor Dr. Md. Abdus Satter Department of Farm Power and Machinery	Member
9.	Professor Dr. Md. Rafiqul Islam Department of Pathology	Member
10.	Professor Dr. Md. Golam Shahi Alam Department of Surgery & Obstetrics and Coordinator, CASR	Member-Secretary

List of the Coordinators
Committee for Advanced Studies and Research

Coordinators	From	To
Dr. A K M Fazlul Huq Reader Department of Soil Science	02-01-1963	30-09-1963
Dr. Quazi Md. Fazlur Rahim Reader Department of Animal Breeding & Genetics	01-10-1963	27-11-1964
Dr. A Karim Professor Department of Soil Science	28-11-1964	13-06-1967
Dr. Ashraful Haque Professor Department of Crop Botany	14-06-1967	31-05-1969
Dr. Quazi Md. Fazlur Rahim Professor Department of Animal Breeding & Genetics	10-07-1969	24-01-1971
Dr. M. Shamsul Islam Professor Department of Agricultural Economics	25-01-1971	10-07-1971
Dr. Md. Kaysar Hussain Professor Department of Agricultural Economics	11-07-1971	31-05-1972
Dr. S H Chowdhury Professor Department of Crop Botany	01-06-1972	03-08-1975
Dr. Amir Hossain Talukder Professor Department of Anatomy & Histology	04-08-1975	15-07-1976
Dr. T I M Fazle Rabbi Chowdhury Professor Department of Microbiology & Hygiene	16-07-1976	14-04-1978
Dr. Md. Abdul Wadud Mian Professor Department of Plant Pathology	15-04-1978	24-01-1980
Dr. S G Mahboob Professor Department of Agricultural Extension & Teachers Training	25-01-1980	28-02-1982

Dr. Md. Ashraf Ali Khan Professor Department of Plant Pathology	01-03-1982	30-09-1984
Dr. Md. Abul Hasnat Professor Department of Animal Breeding & Genetics	01-10-1984	30-09-1986
Dr. S M Altaf Hossain Professor Department of Agronomy	01-10-1986	23-01-1987
Dr. Monowar Ahamad Professor Department of Entomology	24-01-1987	22-01-1989
Dr. Md. Idris Professor Department of Soil Science	23-01-1989	22-03-1991
Dr. S M Altaf Hossain Professor Department of Agronomy	23-03-1991	22-12-1992
Dr. Mosharraf Hossain Professor Department of Entomology	23-12-1992	19-03-1994
Dr. Md. Azizul Haque Professor Department of Horticulture	20-03-1994	31-03-1996
Dr. Musharraf Hossain Mian Professor Department of Soil Science	01-04-1996	18-03-1998
Dr. Md. Eunus Professor Department of Agronomy	19-03-1998	29-06-1998
Dr. S M Bulbul Professor Department of Poultry Science	30-06-1998	29-06-2000
Dr. Md. Rafiqul Hoque Professor Department of Irrigation & Water Management	30-06-2000	31-07-2002
Mr. Muyeen Uddin Ahmad Professor Department of Plant Pathology	01-08-2002	15-11-2002

Mr. Ahmed Ali Professor Department of Animal Breeding & Genetics	16-11-2002	30-06-2004
Dr. Md. Nazrul Islam Professor Department of Food Technology & Rural Industry	01-07-2004	06-04-2007
Dr. Musharraf Hossain Mian Vice-Chancellor Bangladesh Agricultural University	07-04-2007	25-07-2007
Dr. M. Burhan Uddin Professor Department of Food Technology & Rural Industry	26-07-2007	14-05-2009
Dr. Md. Sultan Uddin Bhuiya Professor Department of Agronomy	15-05-2009	07-08-2010
Dr. Md. Golam Shahi Alam Professor Department of Surgery & Obstetrics	08-08-2010	07-08-2012

Ordinance for the Award of Master of Science (MS) Degree

1. Degrees offered

1.1 The degree of Master of Science (MS) will be offered by the Bangladesh Agricultural University (BAU), Mymensingh to a candidate subject to the fulfillment of the requirements prescribed hereunder. The admitted candidate shall have to abide by the rules and regulations that are currently in force and that will be promulgated by the university authority from time to time.

1.2. The MS degree will be offered in the following subjects of specialization :

Agricultural Chemistry, Agricultural Extension Education, Agricultural Economics (Finance), Agricultural Economics (Agribusiness & Marketing), Agricultural Economics (Production Economics), Agricultural Statistics, Agroforestry, Agronomy, Anatomy, Animal Breeding and Genetics, Animal Nutrition, Animal Science, Aquaculture, Biochemistry and Molecular Biology, Biotechnology, Computer Science, Crop Botany, Dairy Science, Entomology, Environmental Science, Farm Power and Machinery, Farm Structure, Fisheries Biology and Genetics, Fisheries Management, Fisheries Technology, Food Technology, Food Engineering, Genetics and Plant Breeding, Horticulture, Irrigation and Water Management, Medicine, Microbiology, Parasitology, Pathology, Pharmacology, Physiology, Plant Pathology, Poultry Science, Rural Sociology, Soil Science, Surgery, Seed Science and Technology, Theriogenology, Veterinary Public Health and Food Hygiene.

The institution's language of instruction and assessment are both in English.

2. Admission requirement

2.1. Candidates for admission into MS study programme must possess a Bachelor of Science or DVM degree from this university or an equivalent degree from other university including an MBBS degree.

2.2. Candidates having passed a Bachelor degree in credit-course system must have secured a minimum GPA of 2.5 out of 4.0 or 3.5 out of 5.0 and a B grade/50% marks in annual system in the pre-requisite course(s) on average. The board of studies will determine the pre-requisite course(s) in which the candidate must have B grade on an average.

2.3. The eligibility of a candidate having degree from other university shall be assessed by an eligibility committee consisting of the proposed supervisor, the concerned head of the department and the Coordinator, CASR. The Coordinator, CASR will act as the convener of the committee.

2.4. A candidate for admission into MS programme for specialisation in Agricultural Extension Education, Agricultural Statistics, Biochemistry & Molecular Biology and Rural Sociology must have studied and passed the relevant paper/course(s) carrying at least four credit hours (150 marks in

annual system), at the Bachelor of Science/DVM degree of this university or an equivalent degree including MBBS from other recognized institutions.

2.5. An in-service candidate, if selected for admission, must obtain necessary clearance and study leave or deputation for the stipulated period from his/her employer to be eligible for admission.

2.6. Candidates shall apply for admission in prescribed form of the university.

2.7. Each student shall fill in five prescribed enrolment cards for each semester to have a coded roll number to carry through all semesters in order to maintain records in the offices of the Coordinator, CASR; the controller of examinations; the head of the department; the registrar; and the student himself/herself.

2.8. Admission of students into MS study programme shall be approved by the Coordinator; CASR on recommendation of the respective board of studies on the basis of academic performance and satisfactory conduct at the Bachelor degree study/in a service.

2.9. The number of students to be admitted in a department in any particular semester will be decided by the respective board of studies on the basis of availability of teaching and research facilities in the department.

2.10. Candidates for admission into MS degree programme shall get themselves admitted in the months of July and January in a year and shall pay the necessary fees including examination fees as per university rules.

2.11. An admitted student to a subject in particular semester (clauses 2.10 & 3.1) may be allowed new admission to another subject for academic reasons, in the next semester. In such case he/she will have to take permission from the existing supervisor and head of the relevant department. This can be exercised for one time only.

2.12. Resolved that the second Master's degree admission to the different courses in this university will not be allowed as a general policy. However, in some exceptional cases, the CASR will consider the merit of individual case for such admission on the basis of the recommendations of their respective appointing authorities.

3. Duration of study

3.1. An academic year shall consist of two semesters of six months each extending from July to December and from January to June. There shall be 18 working weeks in each semester covering instructions, assignments and examinations/or assessment.

3.2. The duration of the study for the degree of MS shall be three consecutive semesters. However, two additional consecutive semesters may be allowed to a student if the supervisor or supervisory committee (consisting of a supervisor and a co-supervisor) and the head of the relevant department of BAU/principal of affiliated colleges/director of

institutes recommend such extension and the recommendation is approved by the CASR.

3.3. If a student fails to obtain an MS degree in five consecutive semesters, his/her admission shall stand cancelled automatically.

4. Course-credit requirements

4.1. Sixteen lectures/contact hours of one-hour duration for a theoretical course and of two-hour duration for a practical course in a semester shall be considered as one credit-hour.

4.2. The number of credits for course work required for each candidate shall be specified by the relevant board of studies. Minimum total credit requirement shall be 40. Out of this at least 24 credits shall be for course work and 16 credits for the research work.

4.2.1. The supervisor may propose a co-supervisor if it is necessary for the research programme.

4.2.2. A student shall be required to complete two types of courses as follows :

a.	Compulsory courses	--	16 credits or more
b.	Elective courses	--	8 credits or more

However, a candidate may be required to take one or more audit courses as desired by his/her supervisor under intimation to the Coordinator, CASR.

4.3. **4.3.1.** Generally a student shall be required to register for research work in the "Thesis" semester usually third semester. But total credits for research work (16 credits) may have the following distribution (clause 6.5), with provision of semester adjustment if needed and suggested by the supervisor:

First Semester	--	3 credits
Second Semester	--	3 credits
Thesis Semester	--	2+8 = 10 credits (For research and thesis)

4.3.2. Earning of research credits: Of the 16 research credits, eight credits will be earned by a student upon "Satisfactory" grading of research by the supervisor. The remaining eight credits will be earned through the successful presentation of Thesis quality of which shall be evaluated as under and shall be linked with GPA and CGPA calculation:

Evaluation of Thesis	--	5 credits
Thesis Defense	--	3 credits

4.4. The supervisor shall recommend a research programme for a student to the Coordinator, CASR for approval by the middle of the first semester.

Any subsequent change in the programme shall have to be recommended by the supervisor and be approved by the Coordinator, CASR.

4.5. A particular course shall be taught by one or two teachers and evaluated accordingly as decided by the relevant board of studies.

4.6. A student shall be required to enroll for a minimum of 12 credits of courses in one of the two "course" semesters.

4.7. The performance of a student in an audit course shall be marked as satisfactory/unsatisfactory. The details of such audit courses shall be recorded in the grade card and in the transcript.

4.8. A student shall have to enroll himself/herself in each semester on payment of necessary fees as per university rules. The fees are:

a.	Course fee per credit hour	--	@ Tk.25/-
b.	Examination Entry Fee	--	@ Tk.75/-

5. Examination procedure

5.1. There shall be at least two classroom examinations and one final examination for each course in a semester. The classroom examinations shall carry 40 percent and the final examination covering the entire course shall carry 40 percent of the total marks carried by a particular course. The remaining 20 percent of the marks shall be assigned to report writing, homework or any other assignments given by the course teacher(s).

5.2. The duration of final examination shall be of three hours for three or four credit courses and it shall be of two hours for one or two credit courses. Regardless of differences in credits and exam duration all courses will be evaluated conveniently on 100 marks in total (covering class tests, assignment and final examination).

5.3. In order to qualify for final examination, a student must have attended at least 75 percent of the classes for the course included to the programme of courses recommended for him/her. Student must have to submit the examination entry forms to the controller of examinations through the relevant head of the department and Coordinator, CASR.

5.3.1. The Supervisor shall make his recommendation on the stipend bill form on the basis of 75 percent of attendance and send it to the Coordinator, CASR through the head of the department. The head of the department shall also make his recommendation on the examination entry form on the basis of 75 percent of attendance.

5.3.2. Fulfillment of the residential requirement of each student shall be ensured by the relevant board of studies.

5.4. All examinations shall be conducted and evaluated by the course teacher(s). The final examinations shall commence at least 30 days before the end of the semester and shall be completed within 10 working days. The course teacher(s) shall also evaluate the home assignments, report writing etc. and shall submit the marks to the head of the department and with a copy to the controller of examinations soon after evaluation under intimation to the Coordinator, CASR for further necessary action. The heads of the relevant departments shall preserve all such records for a period of three years.

5.5. The relevant head of the department shall prepare and circulate the schedule for final examinations of the courses offered by different teachers in a particular semester at least four weeks before the commencement of the examinations.

5.6. The head of the department along with course teacher(s) shall tabulate the results of the semester final examinations and send it to the controller of examinations for publication. The results of the examination shall be published at least a week before the end of the semester.

5.7. **5.7.1.** If a student has not sat for the classroom examination(s) for reasons satisfactory enough to the course teacher(s), the course teacher(s) may give him/her another chance for such examination(s) during the semester but it must be held before the semester final examination.

5.7.2. If a student fails to appear at the semester final examination or obtained 'F' Grade, marks obtained in the class room examination and the assignments will be forfeited.

5.8. Numerical marks given on all component examinations/evaluations (for a course, thesis, thesis defense, etc) shall be finally pooled and converted to letter grade and grade point (4-point scale) as follows:

Marks obtained	*Latter Grade*	*Grade Point*
80% and above	A^+	4
75% to 79%	A	3.75
70% to 74%	A^-	3.50
65% to 69%	B^+	3.25
60% to 64%	B	3.00
55% to 59%	B^-	2.75
50% to 54%	C	2.50
<50%	F	0

Percentage of numerical marks shall be calculated in round figures. A fraction of 0.5 or above shall be considered as next higher number.

5.9. The grade C shall be regarded as the minimum passing grade. A student shall be considered to have earned the requisite credit specified for each course or thesis or thesis defense if he/she secures C or a higher grade in it.

5.10. **5.10.1.** If a student obtains an F grade (Fail) in a particular course, thesis and thesis defense, the Coordinator, CASR may allow him/her to repeat the relevant course, thesis and thesis defense on recommendation of the supervisor and head of the department provided the whole process is completed within study period as stipulated in articles 3.2 and 3.3. A student may be allowed to carry and repeat no more than two courses in a semester but a maximum of four courses during his/her entire study programme to clear F grade(s).

5.10.2. If a student gets F grade in three or more courses in a semester, the concerned semester shall be deemed "crashed" and the student shall have to re-enroll to fulfill the course-credit requirement in available semester(s) subject to clauses 3.2 and 3.3.

5.11. The semester results and overall final results for different courses and thesis shall be presented in letter grades (clause 5.8) with Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA or Cumulative GPA) as applicable, respectively. The maximum attainable GPA or CGPA shall be 4. GPA or CGPA shall be calculated up to three decimal places.

5.12. The calculation of GPA and CGPA (for semester results and final results) shall be done as follows:

$$GPA = \frac{\sum (G_i \times C_i)}{\sum C_i}$$

$$CGPA = \frac{\sum (GPA_i \times TC_i)}{\sum TC_i}$$

Where,

Σ= Sum of,

G_i= Grade Point obtained in individual courses,

C_i= Credit of respective courses,

GPA_i = Grade Point Average obtained in individual semesters,

TC_i = Total credits of respective semesters.

5.13. Boycotting of an examination, adoption of unfair means and breach of discipline in an examination.

5.13.1 The followings shall be considered as examination offences:

i) Copying from incriminating documents or from other's script, ii) Possession of incriminating documents, iii) Communicating with other(s), iv) Smuggling in/out of answer script(s), v) Using abusive language or holding out threat to Invigilator/Chief Invigilator, vi) Creating obstruction or disturbances inside examination hall, vii) Assault or attempt to assault an Invigilator/Chief Invigilator, viii) Possession of arms or other lethal weapons inside the examination hall, ix) Using cell-phone inside examination hall, and x) Any other offences not mentioned specifically above but considered by the chief invigilator as breach of discipline in the examination.

5.13.2 For any offence mentioned in 20.1, the concerned course-examination of the examinee who committed the offence shall be cancelled by the chief invigilator subject to report to the examination discipline committee through the controller of examinations. The result of the said course shall be finalized with "F" grade.

5.13.3 Depending on the gravity of the offence, the chief invigilator may refer the case(s) to the examination discipline committee for further disciplinary action.

Disciplinary action shall be taken by the examination discipline committee and that shall be reported to the syndicate. The decision of the examination discipline committee shall stand final. The committee shall comprise as follows:

i)	Vice-chancellor	Chairman
ii–iii)	Two Deans to be nominated by the Vice-chancellor	Member
iv)	One non-salaried member of the syndicate to be nominated by the Vice-chancellor	Member
v)	Student's Affairs Advisor	Member
vi)	Proctor	Member
vii)	Registrar	Member
viii)	Controller of Examinations	Secretary

Nominated members shall hold office for a term of two years. Four members shall form quorum in the meeting.

5.13.4 Students who either individually or jointly boycott the examination unlawfully shall be marked absent by the chief invigilator and the matter shall be referred to the examination discipline committee for further disciplinary action.

5.13.5 The chief invigilator shall submit the report on the offence committed by the examinee(s) to the controller of examinations

in the prescribed form under sealed cover packet. The controller of examinations shall place the cases of unfair means along with relevant documents before the examination discipline committee.

5.13.6 Before taking any disciplinary action by the examination discipline committee, a notice shall be served upon the examinee found guilty of examination offences to show-cause. The examinee shall be given a time not less than 72 hours for replying the notice.

5.13.7 The examinee who is identified in copying from incriminating documents or from other's script or found creating disturbances inside the examination hall or found possessing incriminating documents may be debarred from appearing at examinations in the current semester.

5.13.8 The examinee who uses abusive languages or holds threat in the examination hall to the chief invigilator or invigilator(s) or other persons engaged in the examination shall be debarred from appearing at examinations for not more than three semesters.

5.13.9 The examinee who assaults or attempts to assault the chief invigilator or invigilator(s) or any other person(s) engaged in the examination shall be liable to a maximum punishment of debarment from subsequent examinations of the university and expulsion for good from the university.

5.13.10 Any examinee found guilty of disclosing his/her identity or deliberately making symbolic marks in his/her answer script, the answer script shall be cancelled by script examiner and the matter be reported to the controller of examinations.

5.13.11 The script of the examinee who has committed an examination offence other than that defined in 20.10 shall not be sent to the examiner for evaluation.

5.13.12 A student expelled for adopting unfair means, shall not get additional semester beyond the time limit defined in the "ordinance for course credit semester system of undergraduate studies at BAU (Third Amendment)" and Ordinance for the Award of Master of Science (MS) Degree".

5.13.13 Any other cases not covered by the above rules shall be dealt by the examination discipline committee in such a manner as it deems fit.

6. Research requirements

6.1. A candidate for MS degree shall undertake a piece of research work under the supervision of a teacher of the university/affiliated colleges/affiliated institutes or under a scientist of any recognized research institute/organisation. A teacher or a scientist must have prior approval from the Coordinator, CASR to act as a supervisor.

6.2. Research work of an MS degree student shall be supervised by a supervisor or supervisory committee consisting of a supervisor and a co-supervisor.

6.3. The co-supervisor shall be chosen from among the supervisors recognized by the Coordinator, CASR.

6.4. The co-supervisor shall be proposed by the supervisor. The heads of the departments/principals of affiliated colleges or head of institutes shall submit the proposals for supervisory committee to the Coordinator, CASR for approval during the first semester of the student's enrolment.

6.5. A student may begin his research work from the first semester and shall complete the research work and thesis writing and submit the same at least 30 days before the end of the last semester of the student's approved study period (Clauses 3.1 and 3.2).

7. Thesis evaluation

7.1. Thesis shall be prepared by the student and submitted to the relevant head of the department after having being signed by the supervisor/ supervisory committee.

7.2. Each thesis shall be individually evaluated on 100 marks by two examiners to be selected by the CASR from a four-member panel suggested by the relevant board of studies. The proposed thesis examiners will be form amongst recognized MS supervisors. The examiners shall send the marks to the head of the department with a copy to the controller of examinations. The average of the marks given by the two thesis examiners shall be considered as the marks obtained, and the letter grade and grade point (GP) will be awarded, accordingly.

7.3. Supervisor and co-supervisor shall not be the thesis examiners of the student(s) under their guidance.

7.4. If a thesis examiner is absent or unavailable for some unavoidable reasons, or declines to act as an examiner, the concerned head of the department may recommend for appointment of the next person in the proposed panel of examiners; or in case of non-availability of any person in the panel, the board of studies may propose a new panel of examiners.

7.4.1. In case of more than 20% variations in marks given by two thesis examiners, a third examiner from the panel of examiners shall examine the thesis and the average of two nearest marks shall be taken as final.

7.4.2. The defense of the thesis of all students in a department shall be conducted and graded by a four-member defense committee of which the head of the concerned department shall be the chairman. The CASR shall select three members from a five-member panel proposed by the relevant board of studies. The committee shall remain valid for consecutive three semesters. All members of the defense committee shall receive copies of the thesis at least seven days before the date of the defense of thesis.

7.4.3. The defense of the thesis shall be held at least two weeks before the end of the semester in presence of a minimum of three members of the defense committee. If one or more members of the defense committee express their inability to be present during the defense due to some unavoidable reasons replacement may be made by the head of the department from the panel under intimation to the Coordinator, CASR. The date and time of defense shall be announced by the concerned head of the department of BAU/principal of affiliated college in consultation with the concerned supervisor and under intimation to the Coordinator, CASR.

8. Publication of results

8.1. The defense committee shall tabulate and finalize the results, and send those to the controller of examinations for publication with a certificate that a copy of the thesis has been sent to the Bangladesh Agricultural University library.

8.2. The results of the candidates shall be published by the controller of examinations by order of the vice-chancellor subject to the approval of the syndicate.

wewMZ 22-12-2011 Zwi‡L AbwôZ wk¶v cwil‡`i 172Zg Awa‡ek‡b MnxZ 4 bs wm×všg‡j mcwikKZ Ges wewMZ 09-01-2012 Zwi‡L AbwôZ wmwÛ‡K‡Ui 298 Zg Awa‡ek‡b MnxZ 2 (K) bs wm×všg‡j ms‡kwaZ

wewMZ 14-06-2012 Zwi‡L AbwôZ wk¶v cwil‡`i 173Zg Awa‡ek‡b MnxZ 4 bs wm×všg‡j mcwikKZ Ges wewMZ 29-06-2012 Zwi‡L AbwôZ wmwÛ‡K‡Ui 299Zg Awa‡ek‡b MnxZ 2 (K) bs wm×všg‡j ms‡kwaZ

Ordinance for MBA in Agribusiness

1. Background

The tremendous need for developing human resources of Bangladesh in the agro economic industrial development process constitutes the background for establishing the Institute of Agribusiness and Development Studies (IADS). The Institute will effectively contribute to agribusiness development of Bangladesh. The mission of this institute is to promote higher professional education and qualified human resources and create a climate of professionalism in the Agro based business arena.

2. Master of Business Administration in Agribusiness (MBA in Agribusiness)

The IADS at Bangladesh Agricultural University (BAU), Mymensingh is a management school to offer a sector specific two-year postgraduate programme leading to Master of Business Administration in Agribusiness degree.

3. Objectives

1. Equipping students having agricultural sciences background with requisite technical knowledge, skill and ability for managerial decision making and implementation.
2. Encouraging entrepreneurial spirit in student to make them effective change agents in Agri-enterprise sector.
3. Preparing the students for managerial and entrepreneurial careers in the enterprises serving or dependent on agriculture and allied sectors. These enterprises may be engaged in
    a. Production and marketing of inputs like seed, fertilizers, irrigation, farm machinery and credit.
    b. Production of crops, vegetables, livestock , poultry and fishery,
    c. Marketing of farm products, agro-processed products and manufactured food products.
4. Conducting studies on development and policy issues with major focus on agriculture and rural economy.
5. Strengthening academic capacity and expertise to provide advisory services.

4. Ordinance for the Institute of Agribusiness Management/MBA in Agribusiness degree.

4.1 Degree Nomenclature: MBA in Agribusiness

4.2. Administration of the Institute

IADS is an Institute of BAU and runs under the policies and rules and regulations of the university. This institute will function under the responsibility and management of a director. The director will normally be appointed from the professors of the IADS for a period of two years.

4.2.1 Board Governors

A board of governors, chaired by the vice-chancellor of BAU will frame and maintain the policy and administrative guidance for this institute. The board members are.

1.	Vice-chancellor of the Bangladesh Agricultural University	Chairman
2.	Dean, Faculty of Agricultural Economics and Rural Sociology	Member
3.	Coordinator, CASR	Member
4.	Two Deans by rotation for 2 years	Member
5.	One Nominee of the Academic Council	Member
6.	Two Nominees of the Syndicate	Member
7.	Two renowned businessman to be nominated by the Vice-chancellor	Member
8.	Director of the Institute	Member-Secretary

4.2.2 Academic Committee

The director will act as chairman of the academic committee. All teachers of the Institute are members of the academic committee. The academic committee will determine and regulate the admission of the students, academic program, curriculum, examination/assessment and co-curricular activities.

4.2.3 Program Officer

Program office will operate under the supervision of the director of the institute. All the academic and administrative procedures including admission processing, registration of the students, counseling for the students, maintaining records of the students, finalizing the grades and graduations, publication of results are organized by the program office.

The Degree of MBA in Agribusiness will be offered by the IADS, BAU, Mymensingh to a candidate after the fulfillment of all the requirements. The admitted student shall have to be familiar and abide by the ordinance of the institute.

5. Eligibility

a. Candidates for MBA in Agribusiness programme should have at least four year degree in agricultural sciences or its equivalent degree from any recognized university.

6. Admission Requirements

6.1 Application for admission must be made to the admission section of the Institute on the form prescribed and by the dates announced.

6.2 Applicant has to sit for a written admission test conducted by the institute comprising of aptitude and comprehensive test.

6.3 The number of students to be admitted to IABM will be approved by the board of governors on recommendations of the academic committee on the basis of result of admission test (merit wise) and seats available.

6.4 Applicants who are finally selected for the program will be notified of acceptance and requirement with deadlines for admission.

6.5 The applicant considered eligible for admission shall fill in three prescribed cards for each semester to have a coded identification number to maintain the academic records in the office of the director.

6.6 A Student shall have to enroll him/herself in each semester on payment of necessary fees as fixed by the institute.

7. Duration of the study

7.1 An academic year shall consist of two semesters each of six months. Semester starts in July and January. There shall be 16 working weeks in each semester covering instructions, assignments, field visit, class test and final examinations. For each course there shall be three lectures of 60 minutes each in every week.

7.2 After completion of the final examination of the 3rd semester, each student shall undertake a 16 weeks internship programme including report/thesis writing by the candidates' own expenses in any agribusiness organization in fourth semester.

7.3 The MBA in Agribusiness program of the IADS is of 64 credit hours to be completed normally within four consecutive semesters. However, if needed two more semesters may be allowed to successfully complete the entire study programme. If a student fails to obtain his/her degree within six consecutive semesters his/her admission shall be cancelled.

8. Credit Hour

Three credit hours are considered as three lectures in a week and 48 lectures each of one hour duration in a semester.

9. Teaching Methods

In addition to lecture method, emphasis will be given to increase student's participation in the classroom. As far as possible case study method of teaching will be given priority. Besides, group discussion and seminar presentation will be followed. Arrangements will be made for practical visits to agribusiness firms to give an exposure on the actual management of those firms.

10. Grading System

10.1 The Institute follows a letter grading system to assess the performance of a student in a coursed. The grades A, B, C are considered passing grades whereas F indicates fail. The numerical equivalents of grades are given below.

Letter Grade	*Equivalent Marks in Percentage*	*Grade Point*
A+	80% and above	4.00
A	75% to 79	3.75
A-	70% to 74	3.50
B+	65% to 69%	3.25
B	60% to 64%	3.00
B-	55% to 59%	2.75
C	50% to 54%	2.50
F	< 50%	0.00

10.2 Percentage of numerical marks shall be calculated in round figures. A fraction of 0.5 or above shall be considered as next higher number.

11. Academic Standard

11.1 Student must maintain cumulative grade points average (CGPA) of 2.5 in a 4.0 scale on the basis of number of courses completed.

11.2 If a student obtains an F grade (fail) in particular course or in defense, the Director may allow him/her to repeat the course. A student may be allowed to carry and repeat not more than two courses in a semester but a maximum of four courses during his/her entire study program to clear F grades.

11.3 The computation of semester grade point average (SGPA) is done by multiplying grade point with the number of credit hours for total credit points which is divided by the number of total credit hours attempted in the semester, example

Course	Letter Grade	Grade Point	Credit hours	Credit points
MGT 501	A+	4	3	12
BUS 502	A-	3.56	3	10.5
FIN 502	C	2.5	3	7.5
MKT 503	A-	3.5	3	10.5
Total			12	40.5

SGPA =Total credit points is divided by total credit hours.

SGPA =40.5 divided by 12 = 3.37

CGPA = Grand total of credit points of 3 semesters divided by total credit hours of three semesters

12. Examination Procedure

12.1 There shall be two class room examination and one final examination for each course in a semester.

12. 2 The duration of final examination shall be three hours for three credit courses.

12.3 All courses will be evaluated on 100 marks basis in total. The class room examinations shall carry 40% and the final examination covering the entire course shall carry 40% of the total marks for each course. The remaining 20% of the marks shall be allocated for class attendance, class participation, field visit and report writing as designed by the course teacher. The course teacher will conduct all examinations and make necessary evaluations.

The internship report/thesis will be evaluated by the examiners selected by the academic committee.

The academic committee shall finalize the results and send to the controller of examinations for publications. The results of the candidates shall be published by the controller of examinations by order of the vice-chancellor subject to the approval of the syndicate.

13. Course offering and requirement

13.1 Total course load for MBA programme is of 64 credit hours. Out of this credit hour each student has to complete 45 credits of core courses and three elective courses of which one course in each semester with a total of nine credit hours.

13.2 After completion of the academic courses successfully each student will go for placement with a business firm to conduct research under guidance of a supervisor and to prepare a research report/thesis in fourth semester.

13.3 The distribution of credit is as follows six credits for the quality of the research report/thesis and four credits for its defense. The report will be evaluated by two examiners and the defense will be conducted by a three member defense committee consisting of the director as chairman, one senior teacher of IADS and one external member.

18-4-2011 Zvi‡L 170Zg wk¶v cwil‡`i 14(i) bs wm×všg‡j Ges 24.6.2011Zvi‡Li 296Zg wmwÛ‡K‡U Ab‡gv`Z|

Contents of MS/MBA Thesis
(Parts of MS & MBA Theses, in the order they should appear)

The best way of writing masters thesis is to prepare an extended outline. Supervisor should carefully review the outline and check whether there are any unnecessary materials that are not directly related to the problem statement. It is expected that the Masters thesis is done with a defined research question that has been solved through well designed research work and the results have been presented systematically. Writing the thesis requires complete organization of the arguments and results. Choose section titles and wordings to clearly give the idea about the findings of the study. This guideline address the major issues related to the structure and style of master thesis.

The fundamental element of MS/MBA thesis generally comprises the following:

1. Title: The wording of the title should be simply a characterization of the theme. This may contain major elements the candidate will address. Preferably titles should be simple and direct, without a lot of qualifying terms or phrases. It is better to solicit the opinion of the research supervisor. Any abbreviation in the thesis title should be avoided.

2. Abstract: This is the only section of the thesis that is read by most of the readers. The abstract extracts the key points of the thesis, highlighting its purpose, methods, major findings and substantive conclusions. It does not include figures, table or citations. If more than one hypothesis is tested this should be stated in the abstract.

The abstract page contains: (i) Title of the Thesis; (ii) Full name of the author; (iii) The word ABSTRACT in bold uppercase just before the text; (iv) The text should be single paragraph in between 250-300 words, in single line spacing.

3. Introduction: This section provides the background for the research work and focused on the topic investigated. The purpose is to convince the reader of the importance of the work done. It includes a historical basis for selecting the problem and shade light on some point of missing pieces of information that will prove pertinent to the problem studied. Brief background information is necessary to make the readers fully familiar to the problem addressed in the thesis.

4. Objectives: This can be included with the introduction or presented as a separate section. The objectives should be very specific and quantifiable. Objectives should not be confused with the ultimate goal of the work.

5. Review of literature: A separate section is necessary to cover the amount of published literature related to the topics studied. The review should be comprehensive but not too elaborative. It is not necessary to cite every study even remotely connected to the subject at hand. It is essential to cite those that are most important for the work done. The references should be current, with the exception of historical, original work. Ideally sources should be primary ones, representing the relevant work done in the field to date and relevant to the specific area of study. Sources whose theories or opinions conflict with the study should also be included. All information is to be appropriately cited, as plagiarism (it is defined as presenting some one else's work as one's own) is illegal. It may require some discussion with the research supervisor to sort out the relative importance of the articles. Critically evaluate the articles and make some independent

assessment of their importance to the research question that has been done for the thesis. Traditional "name and year" system should be followed for citation in the text.

6. Materials and Methods: Once the research experiments/studies are thoroughly planned, presenting the methodology can be the most straightforward part of the thesis work. The materials, methods and experimental designs should be described in a way that they can be repeated by other workers. This chapter may have one or several sections and subsections that can vary with the nature of experiments. For instance, in case of a field experiment, the following information should be provided: (i) Site characteristics: geography, climate, soil properties (ii) Design of the experiments: Randomized Block Design, Split-plot Design, and number of replicates; (iii) Agronomic practices: plant material, fertilization, irrigation, treatments; (iv) Observations and Sampling Methods: phenological stages, light measurement, root sampling method, harvesting.

Precise description of the devices and methods including the citation are required as well.

Appropriate data analysis procedures needs to be written considering the hypotheses tested. Statistical methods should be described with sufficient clarity to allow the reader to verify the reported results. The appropriate tests together with the software used for the analysis should be cited.

7. Results: This section includes analyses of data and presentation of results. Before writing this section, the writer should organize his/her data in tables, graphs, photographs, etc. Various alternatives should be tried to find out the best. Once the data are organized into tables and other illustrations, the textual part of the results can now be written quite easily. Results should be presented logically rather than chronologically, using sub-headings and paragraphs for observations of different experiments. Tables and figures should be presented with clear, concise, self-evident captions and labels. The data presented in the tables should not be repeated in the text, rather the salient features and trends of the data presented the table should be indicated in the text. Statistical analysis should indicate the relationships between variables. Test statistics, level of significance, degrees of freedom and sample size need to be provided in brackets after each data analysis result.

8. Discussion: The section should provide clear interpretation of results in the context of present state of knowledge. Writing a good discussion requires a lot of thinking. The writer must remember few basic points while writing discussion. A writer cannot discuss any data that have not been presented in the results; neither can he include any new data in the discussion section. Moreover, one should not reconsider every scrap of his/her results in the discussion. The thumb rule is "do not discuss if no discussion is needed". An ideal discussion should have the following components: key message summarizing the major achievement, necessary interpretation of the findings, comparisons of the results with relevant findings of others to show how this result fits in the current state of the knowledge, and necessary explanation for any deviation. An honest writer would qualify his/her results in the discussion section by mentioning any limitations and shortcomings of his/her experiments.

9. Conclusions: It is not a rambling summary of the thesis: they are short, concise statements of the inferences that have been made out of the study. It helps to organize these as short numbered paragraphs, ordered, from most to least important. All conclusions should be directly related to selected objectives.

Future direction of research should be included, so that researchers can pick up the ideas that have been generated while this work was done.

10. References: Most examiners scan the list of references looking for the important works in the field, inclusive of their own if applicable. Make sure they are listed and referred to in section of review of literature. All references given must be listed in alphabetical order by author's surname. Works by the same authors should be listed in chronological order.

The reference section should be formatted using the following style:

(i) A book with two authors: Parker C and Riches CR 1993: *Parasitic Weeds of the World: Biology and Control*. CAB International, Wallingford, United Kingdom. pp. 332.

(ii) A book with three or more authors: Penning de Vries FWT, Jansen DM, ten Berge HFM, Bakema A 1989: *Simulation of Ecophysiological Processes of Growth in Several Annual Crops*. Pudoc Wageningen, The Netherlands. pp. 271.

(iii) An edited book: Rabbinge R, Ward SA, van Laar HH (Editors) 1989: Simulation and System Management in Crop Protection. *Simulation Monographs* **32.** Pudoc Wageningen, The Netherlands. pp. 420.

(iv) A chapter in or a selection from a book or proceedings: Riches CR, Parker C 1995: *Parasitic plants as weeds*. In: MC Press and JD Graves (Editors), Parasitic Plants. Chapman and Hall, London, United Kingdom. pp. 226-255.

(v) A corporate author: FAO 1996: Food and Agricultural Organisation of the United Nations, Production 11 Yearbook **46** FAO, Rome, Italy.

(A corporate author can be an organisation, a body, an association, etc., but not usually a person).

(vi) Theses: Alam MGS 1985: Stress and Reproduction in Cows, PhD Thesis, Department of Veterinary Clinical Sciences, University of Liverpool, United Kingdom.

(vii) Journal article: Rabidas SK, Talukder AK, Alam MGS, Yeasmin FY 2012: Relationship between semen quality parameters and field fertility of bulls. *Journal of Embryo Transfer* **27** 21-28.

(viii) Kropff MJ, Lotz LAP 1992: Systems approaches to quantity crop-weed interactions and their application in weed management. *Agricultural System* **40** 265-282.

(ix) Stutzel H 1995: A simple model for simulation of growth and development in faba neans (*Vicia fafa*), 1. Model description. *European Journal of Agronomy* **4** 175-185.

(x) FAO-Agrometerology Group 2000: *World-Wide Agroclimatic Database* [CD-ROM]. FAO, Rome, Italy.

(xi) Computer Programme, Software, or programming Language: ModelKinetix.cox 2001: *ModelMaker 4* [Computer software], The Magdalen Centre, Oxford Science Park, Oxford, United Kingdom.

11. Appendices: Any material which increases the main text volume, but is important to justify the results of a thesis should be appended. The material, which is either too detailed or not that central, should be included in the appendix. Examples includes immense tables of data, programme listings, detailed maps etc.

12. Page layout and paper: The text and wherever possible, all the material of the thesis, including illustrations should be produced on A4-size using white paper of weight 80g/m^2 and printed in black ink. All margins should be 25 mm wide, except the left margin of odd pages and right margin of even pages, which should be 35 mm wide to allow for binding.

13. Typing and fonts: The *book antiqua* font should be used for the thesis text. Time Roman may be used for headings and figure captions. A 12 pt font should be used for the main text, although a slight larger 14pt and 16 pt font may be used for headings and title page, respectively. Headings may be in a bold font. The submitted theses copies should be identical to one another in all ways.

14. Paragraph formatting: One-and-a-half line spacing should be used throughout the text with the following exceptions, which should be single-line spacing: (i) the table of contents; (ii) tables; (iii) footnotes and endnotes; (iv) long quotations of more than 40 words; (v) computer programme in listings/codes. A 6 pt extra space should be provided after each paragraph and each reference using paragraph formatting features of word processor.

15. Numbering: The chapter headings begin at level 1 and numbered sequentially as 1, 2, 3 etc. The level 2 headings (sub-headings) should be numbered as 1.1, 1.2, 1.3 etc while level 3 headings should numbered 1.1.1, 1.1.2, 1.1.3 etc. If more than one appendix is included, these should be numbered separately as Appendix 1, Appendix 2 etc., Figures should be numbered as Figure 1, Figure 2 etc. without distinguishing between different kinds of figures. Tables within the text should be numbered consecutively in a single sequence Table 1, Table 2.

16. Pagination: The title page, approval pages, dedication, acknowledgements, abstract and contents pages etc should be numbered with Roman numerals in lower case as i, ii, iii, iv etc without showing number on the first page. The rest of the thesis should be numbered in a single sequence in Arabic numbers as 1, 2, 3, 4, 5 etc starting again with 1 on the first page of the main text (Introduction). Illustration, charts, tables, diagrams etc., placed within the text of the thesis should be paginated as if they are pages of text. Page number should be in the bottom of the page in the centre, midway between the bottom edge of the paper and the last line of text on the page.

17. Submission of non-paper media: One copy of MS/MBA thesis in PDF format should be submitted on a compact disc (CD) along with the hard-copy of the thesis. Electronic media must be unalterable and that non-paper submissions should normally be treated as supplementary to the paper thesis.

(Specimen showing the layout of the cover page soft-binding for MS / MBA Thesis)

STUDIES ON INTEGRATED MANAGEMENT PRACTICES FOR CONTROL OF MANGO HOPPER AND FRUIT FLY

MS/MBA Thesis

Department of.....

Bangladesh Agricultural University

Mymensingh

May/November (Year)

[N.B. Soft-binding cover page should be in sky blue art paper]

(Specimen page showing the layout of inner title page for soft-binding MS / MBA Thesis)

STUDIES ON INTEGRATED MANAGEMENT PRACTICES FOR CONTROL OF MANGO HOPPER AND FRUIT FLY

A Thesis

Submitted to

Bangladesh Agricultural University, Mymensingh

In Partial Fulfillment of the Requirements for the Degree of

Master of Science/Master of Business Administration

in

.....

Roll No. .....

Registration No.: ..... Session.....

Department of.....
Bangladesh Agricultural University
Mymensingh

May/November (Year)

(Specimen page showing the layout of an approval page for soft-binding MS/MBA Thesis)

STUDIES ON INTEGRATED MANAGEMENT PRACTICES FOR CONTROL OF MANGO HOPPER AND FRUIT FLY

A Thesis

Submitted to

Bangladesh Agricultural University, Mymensingh

In Partial Fulfillment of the Requirements for the Degree of

Master of Science/Master of Business Administration

in

.....

Approved as to style and contents by

(Signature) (Name) Supervisor	(Signature) (Name) Co-Supervisor

(Signature)
(Name)
Chairman, Defence Committee
and
Head, Department of.....

May/November (Year)

(Specimen showing the layout of the cover page hard-binding for MS / MBA Thesis)

STUDIES ON INTEGRATED MANAGEMENT PRACTICES FOR CONTROL OF MANGO HOPPER AND FRUIT FLY

MS/MBA Thesis

(Full name of student)

Department of.....

Bangladesh Agricultural University

Mymensingh

June/December (Year)

N.B. Hard-binding cover page should be in royal blue rexin and typescripts on the cover should be in golden colour

(Specimen page showing the layout of inner title page for hard-binding MS / MBA Thesis)

STUDIES ON INTEGRATED MANAGEMENT PRACTICES FOR CONTROL OF MANGO HOPPER AND FRUIT FLY

A Thesis

Submitted to
Bangladesh Agricultural University, Mymensingh
In Partial Fulfillment of the Requirements for the Degree of
Master of Science/Master of Business Administration

in

.....

By

(Students Name)

Roll No. .....

Registration No.: ..... Session.....

Department of.....
Bangladesh Agricultural University
Mymensingh

June/December (Year)

(Specimen page showing the layout of an approval page for hard-binding MS / MBA Thesis)

STUDIES ON INTEGRATED MANAGEMENT PRACTICES FOR CONTROL OF MANGO HOPPER AND FRUIT FLY

A Thesis

Submitted to
Bangladesh Agricultural University, Mymensingh
In Partial Fulfillment of the Requirements for the Degree of
Master of Science/Master of Business Administration

in

.....

By

(Student's Name)

Approved as to style and contents by

(Signature) (Name) Supervisor	(Signature) (Name) Co-Supervisor

(Signature)
(Name)
Chairman, Defence Committee
&
Head, Department of.....

June/December (Year)

Table of contents

Ordinance for the Degree of Doctor of Philosophy

1. Degree to be offered

The degree of Doctor of Philosophy, hereinafter referred to as PhD will be offered by the Bangladesh Agricultural University (BAU), Mymensingh in the following departments.

Anatomy and Histology, Microbiology & Hygiene, Medicine, Pathology, Parasitology, Pharmacology, Physiology, Surgery & Obstetrics.

Agronomy, Agricultural Chemistry, Agricultural Extension Education , Agroforestry, Biochemistry & Molecular Biology, Biotechnology, Crop Botany, Entomology, Environmental Science, Genetics & Plant Breeding , Horticulture, Plant Pathology, Soil Science, Seed Science & Technology.

Animal Breeding & Genetics, Animal Nutrition, Animal Science, Dairy Science, Poultry Science.

Agricultural Economics, Agribusiness and Marketing, Agricultural Finance, Agricultural Statistics.

Farm Power & Machinery, Farm Structure & Environmental Engineering, Food Technology & Rural Industry, Irrigation & Water Management.

Aquaculture, Fisheries Biology & Genetics, Fisheries Management, Fisheries Technology.

In addition, PhD degree shall be offered in such departments as may be approved by the university.

2. Admission

2.1 Eligibility

An applicant for admission to a course of studies for the PhD degree shall possess at least one 1st class/Grade B in either Bachelor degree or Masters degree with thesis from this university having at least Second Class/Grade B^- or an equivalent degree from any other university recognized by CASR, and at least one year experience in teaching /research/extension with one publication. However, requirement of the 1st class may be relaxed to 2nd class if an applicant possesses a minimum of five years experience in research/ teaching/ extension with at least three publications in recognized scientific journals. An applicant having 1st class with distinction either in Bachelor or Masters Degree (A^+/GPA=4) is eligible for admission into PhD course without any experience and publication.

2.2 Procedure for application

Application for admission shall be made in the prescribed form obtainable from and submitted to the Coordinator, CASR. Those who are in employment must submit their application through proper channel.

2.3 Time schedule

The academic year shall be counted from the date of admission and the maximum period allowed for the submission of PhD dissertation shall ordinarily be four years from the date of admission.

2.4 Admission committee

The eligibility of the applicant for admission shall be examined by an admission committee on the basis of the applicant's academic and professional background, research experience, objectives of the proposed dissertation work, proficiency in English language and performance in the interview.

The Admission Committee shall consist of:

i) Coordinator, CASR	-- Chairman
ii) Proposed Supervisor	-- Member
iii) Chairman of the Relevant Board of Studies	-- Member
iv) One Expert	-- Member

(to be nominated by the Vice-Chancellor**)**

After receiving the panel of not less than three experts from the head of the relevant departments, the Coordinator shall initiate action towards obtaining the vice-chancellor's nomination for formation of the committee. If the admission committee finds the applicant deficient in any subject(s) relevant to the proposed field of research, it may recommend course(s) and refer this matter to the supervisory committee mentioned hereinafter under Section 3.1. The supervisory committee shall certify to the Coordinator that the student has covered these deficiencies within a period of three years from the date of admission failing which the admission to the PhD course will stand cancelled.

2.5 Foreign student

A foreign student seeking admission to the PhD course shall submit application through the respective government agencies to the CASR with a certificate of proficiency in English language and letters of recommendation from two referees for admission. The admission shall be processed as per section 2.4.

Foreign students and Bangladeshi students residing abroad may be exempted from appearing before the admission committee for an interview.

2.6 Enrolment:

An applicant selected for admission into the PhD programme will be enrolled upon recommendations of the admission committee approved by CASR and on payment of prescribed fees. The applicant shall get enrolled into the PhD course within three months from the date of approval by the CASR.

3. Programme of studies

3.1 Supervisory committee

A student admitted to the PhD course shall work under the guidance of a supervisor recognized by the CASR. The CASR shall also approve the supervisory committee proposed by the supervisor in consultation with the head of the department within three

months from the date of enrolment of the student. The supervisory committee may consist of three members:

i)	Supervisor	-- Chairman
ii)	Co-supervisor and	-- Member
iii)	One member if necessary for the research may be from within or outside the department	-- (optional member)

The members of the supervisory committee shall be chosen from amongst the supervisors recognized by the CASR. The supervisory committee shall review the progress of research work of the student and send the progress report annually to the Coordinator, CASR through the head of the department.

3.2 Residential requirement

A PhD student shall undertake a programme of study for a minimum period of two years as a resident student at this University. The student who is in employment must take at least two years leave from the respective employer to work as resident student. The period of this residential requirement will be recommended by the supervisory committee and approved by the CASR within one year from the date of admission. The residential requirement may be met in an educational/research institute recognized by BAU for the purpose on recommendation of the supervisory committee and approved by the CASR.

3.3 Dissertation proposal

A PhD student shall submit a dissertation proposal through the supervisory committee and the head of the department for approval ordinarily within one year from the date of enrolment as per proforma obtainable from the office of the Coordinator, CASR. The CASR will accord approval ordinarily within three months from the date of receipt of the dissertation proposal. Submission of dissertation proposal should normally be preceded by a seminar presented by the student and organized by the head of relevant department.

4. PhD examination

4.1 Examination entry form

A PhD student shall submit the examination entry form, duly filled in, to the controller of examinations through head of the relevant department and the Coordinator, CASR and shall pay the prescribed fees for PhD examination before submission of the dissertation.

4.2 Submission of dissertation

A candidate shall be eligible to submit the dissertation for the award of the degree of Doctor of Philosophy after three years but normally not later than four years from the date of enrolment. The candidate shall prepare the dissertation and submit four copies of dissertation in temporary bound form to the relevant head of the department for onward transmission to the chairman, examination committee for further necessary action.

Any candidate failing to submit dissertation within the specified time for reasons satisfactory to the supervisory committee and the Coordinator, CASR, may be allowed one more year for submission of the dissertation. But if a candidate fails to submit

the dissertation within the total period of five years from the date of enrolment, the enrollment shall automatically stand cancelled.

If, however, a candidate fails to submit the dissertation for reasons beyond his/her control, the candidate may apply for readmission with recommendation of the supervisory committee and the CASR may consider the case for re-admission. In such case, the candidate shall submit the dissertation within one year from the date of cancellation of admission with the privilege of carrying over the past research work, provided that other academic requirements for the PhD degree course are fulfilled by the candidate. If the candidate fails to submit the dissertation within that period, the admission of the candidate shall stand cancelled automatically and no further readmission will be allowed.

4.3 Examination committee

There shall be an examination committee for examining reports of the dissertation examiners and for conducting the viva-voce examination. The relevant board of studies (BOS) will nominate the chairman of the examination committee ordinarily from amongst the professors of the department who are recognized by CASR to act as supervisors for PhD students . The committee shall comprise of:

i)	Chairman	**- (to be nominated by the relevant BOS)**
ii)	Supervisor of the candidate	**- Member**
iii)	Chairman of the relevant board of studies	**- Member**
iv)	One of the dissertation examiners to be nominated by the examination committee	**- Member**
v)	One member to be nominated by Coordinator, CASR	**- Member**

Controller of examination will issue appointment letters to the members after obtaining approval of the vice-chancellor through the Coordinator, CASR.

4.4 Appointment of dissertation examiners

The appointment of dissertation examiners of a student shall be made within two years from the date of admission. The relevant BOS shall recommend a panel of six examiners with full address, of which at least two shall be from foreign universities/institutes, to the Coordinator, CASR. After having obtained the panel of dissertation examiners from the Coordinator, CASR, the vice-chancellor shall accord approval of the three examiners, including one from foreign university/institute. The panel shall not include members of the supervisory committee of the candidate. Having received the approval of dissertation examiners from the vice-chancellor, the Coordinator, CASR, will send the final panel of examiners to the controller of examination. The controller of examinations will make final contact with the examiners and get their consent. If any examiner fails to respond within one month after receiving information from the controller of examination office, then the controller of examination shall contact the next member from the panel for further necessary action. The controller of examination will then send the final list of the examiners to the chairman of the examination committee with the intimation of the Coordinator, CASR.

4.5 Examination of dissertation

The head of the department will forward the dissertations to the chairman of the examination committee, and the chairman shall then send three copies of dissertation to the three examiners.

4.6 Viva-voce examination

The examination committee shall examine the reports of the dissertation examiners. If any correction and/or modification of any part of the dissertation based on the examiners report is necessary, the committee will instruct the candidate to make the correction or modification accordingly. The committee shall ensure incorporation of necessary corrections and modifications and submission of the dissertation to the chairman of the examination committee in triplicate within the period specified by the examination committee before holding the viva-voce examination.

If the reports of at least two of the examiners are found satisfactory, the chairman of the examination committee shall fix a date for viva-voce examination of the candidate under intimation to the Coordinator, CASR, and the controller of examinations. On satisfactory completion of the viva-voce examination, the examination committee with consent from majority of the members shall recommend the candidate to the CASR for award of the PhD degree with all the relevant papers and a final bound copy of the dissertation. The chairman of the examination committee will forward one bound copy of the dissertation to the library and another bound copy of the same to the relevant head of the department for preservation.

4.7 Re-submission of dissertation

If the reports of at least one of the thesis examiners is satisfactory, the candidate shall be given a chance to re-submit the dissertation within six months from the date of notification by the examination committee. Thereafter, the procedure as stated under Section 4.5 and Section 4.6 shall be followed.

4.8 Second viva-voce examination

If the performance of the candidate in the first viva-voce examination is unsatisfactory, the candidate may be allowed to appear at the second viva-voce examination within a period of three months from the date of first viva-voce examination.

4.9 Award of the degree

After considering the report of the examination committee, the CASR shall forward its recommendations to the academic council and on the recommendation of the academic council, the degree shall finally be awarded to the candidate by the syndicate.

5. Anything not covered by this ordinance may be referred to the academic council through the CASR for decision.

wewMZ 14-06-2012 Zwi‡L AbwôZ wk¶v cwil‡`i 173Zg Awa‡ek‡b MnxZ 7 bs wm×všg‡j mcwikKZ Ges wewMZ 29-06-2012 Zwi‡L AbwôZ 299Zg wmwÛ‡K‡U Ab‡gw`Z|

Contents of PhD Dissertation

(Parts of a PhD dissertation, in the order they should appear)

1. **Title Page:** Title page must give the following in the order indicated below.

2. **Approval Sheet:** This part should be followed as per proforma shown below.

3. **Table of contents:** This should list in sequence, with page number, all major subdivisions of the dissertation such as chapters, the references, appendices, etc.

4. **Declaration:** I declare that, except where otherwise stated, this dissertation is based on entirely my own work and has not been submitted in any form to any other university for any degree.

This declaration must be signed by the candidate with date of submission of the dissertation. This declaration is an independent compilation and attachment to your dissertation. Work without this declaration will not be accepted. Candidates are strongly advised to check the regulations for specific requirements for the degree of Doctor of Philosophy.

5. **Acknowledgements (optional)**: Any help received from any person or institution, in the provision of facilities, should be formally acknowledged. The assistance of the supervisor and members of the supervisory committee should be acknowledged. The full name and position of all persons acknowledged are essential.

6. **Biographical Sketch** (not more than 1 page; to be included in the final binding)

7. **Abstract** should briefly summarize the objectives, methods, results and conclusion of the dissertation. This should be composed in 1 page (A4) in the font size not less than 10 with single spacing between lines, and having no paragraph.

8. **Introduction:** It should describe the reasons for and objectives of the research work and should highlighted on the topic studied including evidence for its importance, brief description of the work, and conclude with clear objectives of the study. Brief background information is necessary to make the readers oriented with some of the materials needed to follow the dissertation.

A PhD student must have the capability of conducting independent research. It requires the development of an original research question, a proposal for the methodology to answer it, and a plan for reaching appropriate conclusions.

9. **Review of literature: A** separate section for this topic is necessary to cover the amount of published literature, which is related to the topics studied. It is essential to cite those that are most important for the work done. The majority of the references should be current, with the exception of historical, original work. Most sources should be primary ones, representing the relevant work done in the field to date. They should be clearly relevant to the specific area of study. Sources whose theories or opinions conflict with the study should also be included. All information is to be appropriately cited as plagiarism (it is defined as presenting some one else's work as one's own) is illegal. Critically evaluate the articles and make some independent assessment of their importance to the set objectives/research questions that have been done for the dissertation.

10. **Materials and Methods:** This chapter should clearly describe the setting and management of the study with clear information on the materials used, treatments, design of experiment, collection of data and analysis of data.

11. **Results:** This should be presented clearly using tables, figures, photographs etc. in standard format and style (having appropriate captions). Presentation of same results in different forms of illustrations should be avoided. Correct interpretation of the statistical results is necessary. The findings of the study should be critically judged in relation to the present knowledge. Suggestions for alternative approaches may be given. Repetitions and superfluous statements should be avoided.

12. **Discussion:** Discussion chapter should be presented separately. Every statement must be supported by a reference to published scientific literature or by original work. It does not repeat the details of critical thinking and analysis found in published sources, it uses the results as fact and refers the reader to the source for further details. A dissertation must be corrected and defensible in logic applied to scientific findings or results. This should provide clear interpretation of results in the context of what has been done.

13. **Summary:** This section will be carefully read by the examiners and others. The list of contributions of new knowledge needs to be incorporated. The future research direction should be included so that researchers picking up this idea in future.

14. **Conclusions:** The contents of the dissertation should be summarized properly, and appropriate conclusions and recommendations should be made. The part should be brief, to the point and accurately described, and should be based on the set objectives and findings of the study. Specific suggestions can also be made. There will be no table, figure or citation of references in this part.

15. **References:** It should be arranged in alphabetical order, and only the references cited in the text should be listed. All the references listed must be complete, accurate and in a standard format. Uniformity throughout the list is essential. An acceptable format is shown in a specimen page.

16. **Appendices:** Usually contain the supporting materials, e.g., analysis of variance tables, copies of questionnaires used in the study, weather data etc. However, in each case the author must assure himself/herself that inclusion of the appendix is necessary. All appendices must be referred in the text.

17. **Page layout and paper:** The text and wherever possible, all the material of the thesis, including illustrations should be produced on A4-size using white paper of weight 80g/m^2 and printed in black ink. All margins should be 25 mm wide, except the left margin of odd pages and right margin of even pages, which should be 35 mm wide to allow for binding.

18. Typing and fonts: The *book antiqua* font should be used for the thesis text. Time Roman may be used for headings and figure captions. A 12 pt font should be used for the main text, although a slight larger 14pt and 16 pt font may be used for headings and title page, respectively. Headings may be in a bold font. The submitted theses copies should be identical to one another in all ways.

19. Paragraph formatting: One-and-a-half line spacing should be used throughout the text with the following exceptions, which should be single-line spacing: (i) the table of contents; (ii) tables; (iii) footnotes and endnotes; (iv) long quotations of more than 40 words; (v) computer programme in listings/codes. A 6 pt extra space should be provided after each paragraph and each reference using paragraph formatting features of word processor.

20. **Numbering of the pages:** All papers should be numbered, including introductory pages, appendices, etc. A single sequence of Arabic numbers should be used. This is to facilitate photocopying and binding, so page may remain in the correct order. If necessary, Roman numerals may be used to number sequential sub-sets of the whole dissertation.

The final hard-bound copies will bear a blocked title in gold in a top position on the front hard black coloured cover with name of degree, full author's name, name of department and university, month and year of submission of dissertation. The spine will bear the author's name, name of the degree, and year of submission, reading from bottom to top.

21. Pagination: The title page, approval pages, dedication, acknowledgements, abstract and contents pages etc should be numbered with Roman numerals in lower case as i, ii, iii, iv etc without showing number on the first page. The rest of the thesis should be numbered in a single sequence in Arabic numbers as 1, 2, 3, 4, 5 etc starting again with 1 on the first page of the main text (Introduction). Illustration, charts, tables, diagrams etc., placed within the text of the thesis should be paginated as if they are pages of text. Page number should be in the bottom of the page in the centre, midway between the bottom edge of the paper and the last line of text on the page.

22. **Submission of non-paper media:** One copy of dissertation in Compact Disk (CD) as non-paper media should be submitted along with the hard-copy of the dissertation. Where appropriate to the academic work being conducted, this additional non-paper media may be useful. Electronic media must be unalterable and that non-paper submissions should normally be treated as supplementary to the paper dissertation.

The style and layout of the Cover Page, Title Page, Approval Sheet, Declaration, Contents, and References, as approved in the Emergency Meeting of CASR held on 19 July 2012.

Proforma for application for admission into PhD degree programme

1. Name of candidate:
2. Date of birth:
3. Present address:
4. Permanent address:
5. Nationality:
6. Academic qualification with division/class year of passing & name of Institution:
7. a) Teaching and/or research experience:
   b) List of publications (with reprints):
8. Department in which admission is sought:
9. a) Proposed Title of Research for PhD:
   b) Title of MS/MSc/MBA Thesis:
10. Department/Institute where research to be performed:
11. Name of proposed supervisor with address:
12. Scientific background of the research project**:**
    a) Significance of overall problem**:**
    b) Review of literature and an account of related work already done or in progress in other institute/country or elsewhere:
13. Scientific scope of research
    a) Research objectives**:**
    b) Tentative technical programme/methodology**:**
    c) Research work-plan (year-wise):
14. References:
15. Source of fund for conducting research (attach documentary evidence):
16. Assurance of study leave by the employer (in case of in-service candidate):

Name & Signature of the candidate:

Name & Signature of the proposed Supervisor

Name & Signature of the Head of the Department

N.B. Necessary documents should be attached

Proforma for submission of PhD dissertation proposal

1. a) Name of the student:

   b) Department:

   c) Date of enrolment:

2. Title of PhD dissertation:

3. Significance of the proposed PhD dissertation work:

4. Objectives of the PhD dissertation work:

5. Review of literature related to the PhD dissertation work:

6. Methodology to be followed:

7. Work plan:

8. References:

9. Research facilities required:

10. Source(s) of fund:

11. Signature of the student:

12. Signature of the Supervisor & other Members of the Supervisory Committee with Name and designation

13. Countersignature by the relevant Head of the Department:

Note: A cover page and list of contents are to be included at the beginning of the dissertation proposal

[PhD Dissertation Cover Page (Soft-binding for examination)]

STUDIES ON INTEGRATED MANAGEMENT PRACTICES FOR CONTROL OF MANGO HOPPER AND FRUIT FLY

PhD
Dissertation

Department of.....
Bangladesh Agricultural University
Mymensingh

(Month Year)

.....

N.B.: *The copies of dissertation for examination should have soft- binding. Sky blue art paper should be used for the cover, and the above text as suggested for the title page should also be printed on the cover.*

[Specimen page showing the layout of an inner title page of PhD Dissertation
(Soft-binding for examination)]

STUDIES ON INTEGRATED MANAGEMENT PRACTICES FOR CONTROL OF MANGO HOPPER AND FRUIT FLY

A Dissertation

Submitted in accordance with the requirements of the
Bangladesh Agricultural University, Mymensingh
for the degree of

DOCTOR OF PHILOSOPHY

By

(Roll No. ..... / Year .....)

(Reg. No. ..... / Year .....)

Department of.....
Bangladesh Agricultural University
Mymensingh

(Month Year)

[Specimen page showing the layout an approval sheet of PhD Dissertation
(Soft-binding for examination)]

STUDIES ON INTEGRATED MANAGEMENT PRACTICES FOR CONTROL OF MANGO HOPPER AND FRUIT FLY

A Dissertation

Submitted in accordance with the requirements of the
Bangladesh Agricultural University, Mymensingh
for the degree of

DOCTOR OF PHILOSOPHY

By

(Roll No. ..... / Year .....)
(Reg. No. ..... / Year .....)

Approved as to style and contents by

(Signature)
(Name)
Supervisor

(Signature)
(Name)
Co-supervisor

(Signature)
(Name)
Member

(Signature)
(Name)
Chairman, Examination Committee

Department of.....
Bangladesh Agricultural University
Mymensingh

(Month Year)

[Specimen page of PhD Dissertation Cover Page (Hard-binding)]

STUDIES ON INTEGRATED MANAGEMENT PRACTICES FOR CONTROL OF MANGO HOPPER AND FRUIT FLY

PhD
Dissertation

(Student's full name)

Department of.....
Bangladesh Agricultural University
Mymensingh

(Month Year)

.....

N.B.: *The final copies of dissertation should be properly bound between stiff covers. Black coloured rexin should be used for the cover and the above text as suggested for the title page should also be inscripted on the cover in golden colour. The year of submission, the degree, the title of the dissertation and the name of the author should also be inscripted on the spine of the dissertation in abbreviated form.*

[Specimen page showing the layout of an inner title page for hard-binding PhD Dissertation)

STUDIES ON INTEGRATED MANAGEMENT PRACTICES FOR CONTROL OF MANGO HOPPER AND FRUIT FLY

A Dissertation

Submitted in accordance with the requirements of the
Bangladesh Agricultural University, Mymensingh
for the degree of

DOCTOR OF PHILOSOPHY
By

(Student's full name)

(Roll No. ..... / Year .....)

(Reg. No. ..... / Year .....)

Department of.....
Bangladesh Agricultural University
Mymensingh

(Month Year)

(Specimen page showing the layout an approval sheet for hard-binding PhD Dissertation)

STUDIES ON INTEGRATED MANAGEMENT PRACTICES FOR CONTROL OF MANGO HOPPER AND FRUIT FLY

A Dissertation

Submitted in accordance with the requirements of the
Bangladesh Agricultural University, Mymensingh
for the degree of

DOCTOR OF PHILOSOPHY

By

(Student's full name)

(Roll No. ..... / Year .....)
(Reg. No. ..... / Year .....)

Approved as to style and contents by

(Signature)
(Name)
Supervisor

(Signature)
(Name)
Co-supervisor

(Signature)
(Name)
Member

(Signature)
(Name)
Chairman, Examination Committee

Department of.....
Bangladesh Agricultural University
Mymensingh

(Month Year)

DECLARATION

I declare that, except where otherwise stated, this dissertation is based on entirely my own work and has not been submitted in any form to any other university for any degree.

Date:..... (Signature)

.....

(Full name of the candidate)

Note: *The name and signature of the candidate will appear in all copies of the dissertation*

STRESS AND REPRODUCTION IN COWS

M. G. S Alam

ABSTRACT

To establish the role of cortisol on release of LH in cyclic cows and during post-partum period, normal veterinary procedures (stressor) and drugs were used to stimulate the release of cortisol and LH. A dose response curve was established with 8 different i.m. doses of ACTH. Cortisol concentrations increased within 2 h and a linear response was achieved up to 0.12 mg ACTH. The doses of 0.06 mg ACTH caused the release of slightly higher cortisol concentrations (20.0 ng/ml) than the 5.0-10.0 ng/ml released by veterinary procedures. Even simple veterinary procedures increased plasma cortisol concentrations within 30 min from 2 ng/ml to 13.8 ng/ml. Unacclimatized cows initially had high values of plasma cortisol (5.0-10.0 ng/ml). There were no significant changes in tonic LH secretion. The response of the adrenal cortex to ACTH increased with the advancement of lactation up to Day 38-45 post-partum. In cyclic cows complete suppression of LH release after 20 μg GnRH occurred after simultaneous 0.25, 0.50, 1.0 and 2.0 mg ACTH i.v. treatment but the LH release after 0.06 and 0.12 mg ACTH was the same as in controls. There was a gradual recovery of LH response of GnRH up to Day 14 post-partum. There was no release of LH after oestradiol benzoate (OB) treatment on Day 1 post-partum and thereafter the peak response increased until Day 21, occurring between 14 and 34 h after injection. There was a significant negative correlation between the time to peak concentration and Day post-partum. Cows which had plasma progesterone > 0.3 ng/ml did not respond to OB. Cows tested in the follicular or luteal phased of an established cycle had LH responses to GnRH which were significantly ($p < 0.005$) greater than those in post-partum cows. In those cows which responded to OB, the peak LH release was also greater in cyclic cows than post-partum cows. The mean concentrations of PHFM in 4 cows on Days 1-4 post-partum were 785.3-430.0 pg/ml and declined linearly to 90.9 pg/ml on Day 20. There was no increase in plasma PGFM concentrations after 1.0 mg OB in post-partum and cyclic cows; however, significant ($p<0.001$) increases were achieved in 3 cows in the luteal phase after 5.0 mg OB. Cows with follicular cysts released LH after 20 μg GNRH but none responded to exogenous OB. Plasma cortisol increased and remained elevated up to 3-4 h after 0.06 and 1.0 mg ACTH treatment. In conclusion, endocrine challenge tests have been developed to study the influence of stress on LH release. Natural stresses did not appear to alter tonic LH secretion, however the positive feedback to OB was absent in some cows. ACTH induced cortisol did suppress LH release after GnRH, but confirmation of LH suppression by stress in still required.

Note: *To be composed in one page using this space and margin used in the text of the dissertation.*

Contents

* These are not allowed to write in the soft-copies of the dissertation.

(Specimen page showing an acceptable format for the "References" for a PhD dissertation)

References

(i) A book with two authors: Parker C, Riches CR 1993: *Parasitic Weeds of the World: Biology and Control.* CAB International, Wallingford, United Kingdom. pp. 332.

(ii) A book with three or more authors: Penning de Vries FWT, Jansen DM, ten Berge HFM, Bakema A 1989: *Simulation of Ecophysiological Processes of Growth in Several Annual Crops.* Pudoc Wageningen, The Netherlands. pp. 271.

(iii) An edited book: Rabbinge R, Ward SA, van Laar HH (Editors) 1989: Simulation and System Management in Crop Protection. *Simulation Monographs* **32.** Pudoc Wageningen, The Netherlands. pp. 420.

(iv) A chapter in or a selection from a book or proceedings: Riches CR, Parker C 1995: *Parasitic plants as weeds*. In: MC Press and JD Graves (Editors), Parasitic Plants. Chapman and Hall, London, United Kingdom. pp. 226-255.

(v) A corporate author: FAO 1996: Food and Agricultural Organisation of the United Nations, Production 11 Yearbook **46** FAO, Rome, Italy.

(A corporate author can be an organisation, a body, an association, etc., but not usually a person).

(vi) Theses: Alam MGS 1985: Stress and Reproduction in Cows, PhD Thesis, Department of Veterinary Clinical Sciences, University of Liverpool, United Kingdom.

(vii) Journal article: Rabidas SK, Talukder AK, Alam MGS, Yeasmin FY 2012: Relationship between semen quality parameters and field fertility of bulls. *Journal of Embryo Transfer* **27** 21-28.

(viii) Kropff MJ, Lotz LAP 1992: Systems approaches to quantity crop-weed interactions and their application in weed management. *Agricultural System* **40** 265-282.

(ix) Stutzel H 1995: A simple model for simulation of growth and development in faba neans (*Vicia fafa*), 1. Model description. *European Journal of Agronomy* **4** 175-185.

(x) FAO-Agrometerology Group 2000: *World-Wide Agroclimatic Database* [CD-ROM]. FAO, Rome, Italy.

(xi) Computer Programme, Software, or programming Language: ModelKinetix.cox 2001: *ModelMaker 4* [Computer software], The Magdalen Centre, Oxford Science Park, Oxford, United Kingdom.

(Proforma for the PhD Dissertation Examiner's Evaluation Report)

[To be used by the Dissertation Examiners]

A. Dissertation Identification

1. Title of the dissertation:

2. Name of the Department:

3. Roll No. of the candidate: ..... Year: .....

4. Registration No. of the candidate: ..... Year: .....

B. Specific comments

(please give tick mark, where applicable and give your comments on separate sheets)

1. Title of the dissertation

a) Whether the Title of the dissertation is appropriate: Yes ☐ No ☐

- If not, please make comment -

2. Abstract (1 page with no paragraph)

a) Whether the Abstract of the dissertation is acceptable: Yes ☐ No ☐

- If not, please indicate the reasons(s) -

3. Introduction

a) Whether the Introduction is well-written with indication of major problem(s) and setting of clear objective(s) using appropriate literature support, and is in an acceptable form: Yes ☐ No ☐

- If not, please indicate the lacking/inadequacies-

4. Review of Literature

a) Whether the amount of published literatures are covered or not: Yes ☐ No ☐

- If not, please indicate the lacking/inadequacies-

5. Materials and Methods

a) Whether the provided information is adequate and methodology followed is acceptable: Yes ☐ No ☐

- If not, please indicate the defects -

b) Whether setting and management of the experiments were appropriate and described well with clear information on the materials, treatments, design of experiments and collection of data: Yes ☐ No ☐

- If not, please indicate clearly the defects and inadequacies -

6. Results

a) Whether the data were analyzed properly, and statistical analyses have been presented where necessary: Yes ☐ No ☐

- If not, please indicate the defects clearly-

b) Whether the results have been presented in acceptable form and style: Yes ☐ No ☐

- If not, please clearly mention the defects -

c) Whether the table or results and illustrations have been used in acceptable form with appropriate captions : Yes ☐ No ☐

- If not, please indicate the defects clearly –

d) Whether the findings and results of statistical analyses have been discussed and interpreted clearly using appropriate references: Yes ☐ No ☐

7. Discussion

a) Whether the research question has been discussed with expected outcome using appropriate references: Yes ☐ No ☐

- If not, please indicate the lacking -

8. Summary

a) Whether the contents of the dissertation have been summarized properly and appropriate conclusions and recommendations have been made: Yes ☐ No ☐

- If not, please indicate clearly the defects -

9. Conclusions

a) Whether they are written in short, with the statement of inferences that have been made out of this work : Yes ☐ No ☐

- If not, please indicate clearly the defects -

10. References

a) Whether the references cited in the text have been listed in a standard and acceptable form and style: Yes ☐ No ☐

- If not, please indicate the defects and inconsistencies -

11. Appendices

a) Whether the appendices included are judicious, and in acceptable form: Yes ☐ No ☐

- If not, please make comment -

C. General comments

1. Whether the dissertation is based on candidate's original research: Yes ☐ No ☐
   - If there is any doubt, please indicate with clear evidence -
2. Whether the findings of the study is likely to make distinct contribution to be the knowledge of the subject: Yes ☐ No ☐
   - If not, please indicate the reason -
3. Whether the overall standard of presentation, in respect of language, format and style is acceptable: Yes ☐ No ☐
   - If not, please indicate clearly -

D. Other comments **(If any, separate sheet may be used)**

E. Recommendation **(please give tick mark against only one statement)**

1. The dissertation may be accepted for the award of PhD degree
2. The dissertation may be accepted for the award of PhD degree only when the corrections/modifications/ improvement are made in the light of above comments
3. The dissertation is not acceptable for the award of PhD degree

---

Date: Signature of the Dissertation Examiner

Full Name:

Official seal, if any Designation and Address with cell phone number

.....

.....

Candidate's Bio-data and information relevant to the award of PhD degree

1. Bio-data:

a. Name of the student :

b. Department :

c. Date of birth :

d. Number of publications :

e. Permanent address :

2. Dissertation and information on Dissertation examination:

a. Title of the Dissertation :

b. Supervisory Committee : (i)..... - Supervisor

(ii)..... - Co-supervisor

(iii)..... - Member

c.

Date of PhD admission	Date of submission of dissertation	Date of viva-voce examination	Date of submission of report by the examination committee

d. Course & Seminar of PhD research programme :

e. Abstract of the dissertation :

3. Name and recommendation of three dissertation examiners:

i. :

ii.

iii.

4. Name of the examination committee:

i.	.....	Chairman
ii.	..... (Supervisor)	Member
iii.	Chairman, Relevant Board of Studies for	Member
iv.	..... (One of the dissertation examiners)	Member
v.	..... (CASR nominee)	Member

5. Report of the PhD examination committee

Name of the student :

Roll No. /Year :

Reg. No./Session :

Name of the Department :

Title of the Dissertation :

(Please tick(√) in the right box):

1) Number of Dissertation Examiners recommended for:

(i)	Acceptance for the award of the PhD Degree without any modification(s)	1	2	3	None
(ii)	Acceptance with corrections/modifications/improvements for the award of the PhD Degree	1	2	3	None

2) Modified/corrected/improved by candidate Yes No

3) viva-voce Satisfactory Unsatisfactory

4) Achievement of the research work (Shortly):

.....

.....

.....

.....

6. Decision of the PhD Examination Committee:

The candidate incorporated all corrections and modifications suggested by dissertation examiner(s) before viva-voce examination. The examination committee unanimously recommends to CASR, Bangladesh Agricultural University, that ... (candidate's name)..... be awarded the degree of Doctor of Philosophy by the Bangladesh Agricultural University, Mymensingh.

.....
Chairman of the examination committee
Department of.....
Bangladesh Agricultural University
Mymensingh
Phone: .....

CRITERIA FOR RECOGNITION OF SUPERVISORS FOR MASTER'S AND PhD DEGREE STUDENTS

(a) For MS students

(i) PhD or equivalent degree, or MS or equivalent degree with five years of teaching and/or research experience and at least two research publications published in any recognized journal.

(ii) An individual supervisor should not take more than three students in one session. This rule, however, may be relaxed in special cases.

(b) For PhD students

(i) Doctor of Philosophy or equivalent degree with ten years of teaching and/or research experience and at least ten research publications – published in recognized journals.

(ii) In case of a person having no PhD or equivalent degree, 20 years of experience in teaching and/or research with minimum of 15 research publications- published in recognized journals.

(iii) A proposed supervisor having PhD degree should have supervised at least five Master students before being recognized as a PhD supervisor.

(iv) A proposed supervisor who has not obtained a PhD or equivalent degree should have supervised at least ten Master students before being recognized as a PhD supervisor.

LIST OF BAU DEPARTMENT-WISE RESEARCH INTEREST

FACULTY OF VETERINARY SCIENCE

Department of Anatomy & Histology:

Anatomy of Laboratory and zoo animals including avian species, anatomy, histology and histochemistry of the skeletal, digestive, respiratory, blood vascular, lymphatic, urinary, reproductive, endocrine, integumentary systems of the domestic and some wild animals.

Department of Physiology:

Reproductive physiology and endocrine glands, radiobiology, physiology of digestion, absorption and metabolism, avian physiology, nutrional physiology.

Department of Pharmacology:

Cardio-vascular, renal, endocrine, nutritional and neuro pharmacology, toxicology, teratology, chemotheraphy, pharmaceutical chemistry, indigenous medicinal plants, environmental toxicology, phytotoxicology, toxicology of pesticides and metallic compounds, anthelmintics therapy in parasitic diseases, anti-diabetic effect of herbal extracts, arsenic poisoning and mitigation.

Department of Parasitology:

Epidemiology of gastrointestinal nematodes, epidemiology, immunology and drug resistance in chicken, *Eimeria* and ascarids; chemotheraph of gastrointestinal helminths; biology of ticks, epidemiology of vector horne parasites, epidemiology, zoonosis and control of parasitic diseases, molecular biology and epidemiology of vector borne diseases, molecular biology of snail borne trematodes and arthropod vectors, parasites of zoo and wild animlas, zoonotic diseases and public health problems, molecular biology and epidemiology of protozoan diseases.

Department of Pathology:

Morphological pathology, pathogenesis of microbial and parasitic diseases, nutritional pathology, avian pathology, oncology, immunology and immunopathology.

Department of Medicine :

Dermatology, epidemiology of reproductive diseases, bovine rotaviruses, parasitic diseases, clostridial diseases, efficacy of therapeutic drugs, animal welfare and ethics.

Department of Surgery & Obstetrics :

Veterinary surgery, reproductive endocrinology, biotechnology, obstetrics, andrology, reproductive hormones, reproductive disorders and dysgenesis, gastroenterology, reproductive immunology, gynaecology, anaesthesiology, radiology, clinical surgery, multiple ovulation-embryo transfer, cryopreservation of spermatazoa, sperm development acrosome reaction and fertilization, under health and mastitis, testing of pharmaceutical compounds on surgical and reproductive diseases, reproductive biotechnology and frontiers reproductive biology.

Department of Microbiology & Hygiene:

Bacteriology, virology, immunology, serology, food microbiology, avian mycoplasma, zoonoses, environmental hygiene and sanitation, production of hygienic quality of meat and milk, sanitary quality of water and prevention of water-borne diseases, antigenic and immunogenic properties of indigenous strains of PPR and FMD viruses, avian respiratory diseases, hygienic rearing of rural and commercial poultry, veterinary standard of animal product, biologics, surveillance and monitoring of disease control and prevention using molecular techniques, drug resistance genes of bacterial agents, epidemiology of emerging diseases, sanitary and phyto-sanitary control of food, world trade and its requirement.

FACULTY OF AGRICULTURE

Department of Agronomy:

Crop production, fertilizer management, weed science, weed ecology and weed control, seed technology, farming systems, crop morphogenesis, plant nutrition, soil fertility and irrigation agronomy, crop physiology, agroforestry, crop diversification, crop-weed interaction, farm management.

Department of Soil Science:

Soil physics, soil and atmospheric chemistry, crop water management, soil microbiology and fertility, potassium and sulphur nutrition of crops, environmental pollutions, pesticide residues, biological nitrogen fixation, pedology, soil survey, environmental science.

Department of Entomology:

Insect taxonomy, morphology and biology, integrated pest management, mite ecology, systematic entomology and industrial insects, pesticide toxicology, biocontrol, tropical pest management, insect pathology, host plant resistance, insect behaviour.

Department of Horticulture:

Varietals improvement of fruits and vegetables, horticultural seed technology, production of fruit and vegetables, post-harvest technology of fruits and vegetables, homestead fruit production and development, micropropagation, physiology of vegetables, vegetable breeding, plant biotechnology, agroforestry, flower production and its post-harvest technology.

Department of Plant Pathology:

Diseases of cereals, vegetables, oilseeds, pulses, spices and sugar crops, seed pathology, plant virology, plant bacteriology, phytonematology, seed borne diseases, post-harvest technology, spatial distribution of plant diseases and physiological plant pathology, integrated disease management, biological control in plant disease management, genetic engineering for disease resistance, disease management package various crops, formulation of biopesticide, biofungicide, induction of disease resistance plant, detection of seed borne diseases and their management and treatment.

Department of Crop Botany:

Crop ecology, biotechnology, plant physiology, agroforestry, plant anatomy, seed physiology, physiological ecology, plant morphology, plant diversity and conservation, floral biology.

Department of Genetics and Plant Breeding:

Breeding of HYV oil seeds, tomato, maize, wheat, biometrical genetics, cytogenetics of field crops, biotechnology, tissue culture, alien gene transfer, molecular genetics, genetic engineering, hybrid rice breeding, marker assisted selection and recombinant DNA technology for crop improvement, conservation of germplasm of crops, bioinformatics, genomic, proteomics techniques for stress tolerant crops.

Department of Agricultural Extension Education:

Agricultural extension, agricultural education, farming system research, extension administration, ICT in agriculture, communication and technology transfer, livelihood issues, human resource development, food security issues, environment and sustainability in agriculture, climate change and adaptation, project management, gender issues in agriculture, community and rural development, poverty reduction strategies, disaster management.

Department of Agricultural Chemistry:

Plant nutrition, nitrogen biodynamic in soil, environmental pollution, pesticides chemistry and chemistry of secondary metabolites, degradation of agricultural wastes and production of biogas, chemistry of irrigated soils, water quality, assessment of soil and water pollution in relation to crop quality, zinc nutrition in soils and plants.

Department of Biochemistry and Molecular Biology:

Agricultural and nutritional biochemistry, antinutritional factors, insect nutrition, soil nitrogen transformation and clinical biochemistry, neuropeptides and enzymology, plant molecular biology, biotechnology, enzymology and molecular biology, plant biochemistry and nutrition, soil microbiology land molecular biology, small heat shock protein, guard cell signaling, peptide chemistry and nutrition,

Department of Agroforestry:

Agroforestry, tissue culture (micropropagation), morpho-physiology, anatomy and wood quality, forest microbiology.

Department of Biotechnology:

Population genetic structure studies of livestock, poultry and different freshwater fishes using random amplified polymorphic DNA (RAPD) analysis, mtDNA-RFLP analysis and microsatellite DNA analysis, assessment of inbreeding or outbreeding problems in livestock, poultry and the hatchery populations of Indian major carps and other cultured fish species using different molecular markers. Genetic structure analyses of endangered wild, livestock, poultry and fish species using molecular markers, genetic variability studies between wild and hatchery stocks of freshwater fish species using molecular markers.

Department of Environmental Science:

Climate change, disaster management, heavy metals, pesticide analysis and residues, land degradation, global warming issues, climate change, mitigation of greenhouse gas emissions, carbon sequestration in soil, atmospheric meteorology and disaster, forest fire and climate change dilemma.

Department of Seed Science and Technology:

Seed Technology, quality seed production technology, storing and management of seeds, seed health, high quality seed production and management

FACULTY OF ANIMAL HUSBANDRY

Department of Animal Science:

Beef and draught cattle production, sheep and goat production, meat science and technology, hides and skin technology, feeding, housing, management environment, and physiology of production and reproduction of livestock, management and utilization of animal wastes and by products, processing, preservation, quality and safety of meat and meat products, conservation zoo and wild life, laboratory animal management, maintaining biodiversity and ecology.

Department of Animal Breeding and Genetics:

Artificial insemination & biotechnology, animal genetics, quantitative genetics, animal reproduction, animal breeding, poultry breeding.

Department of Animal Nutrition:

Ruminant and non-ruminant nutrition, avian nutrition, grassland technology, feed processing and feed industry, organic waste utilization, nutrition and reproduction.

Department of Poultry Science:

Production of broiler, duck and specialized fowls, poultry nutrition, poultry housing, poultry breeding, poultry reproduction, egg quality, advanced poultry product technologies, hatchery management, poultry behaviour, poultry environment.

Department of Dairy Science:

Production of dairy cattle, dairy feeds and fodder, dairy manufacture, dairy microbiology and biotechnology of milk and milk products, dairy chemistry, quality control of dairy products, fermentation technology.

FACULTY OF AGRICULTURAL ECONOMICS & RURAL SOCIOLOGY

Department of Agricultural Economics:

Development economics, production economics, farm management analysis, econometrics, economics of irrigation and water resources, gender relations in agriculture, economics of crop, livestock and fisheries.

Department of Agricultural Finance:

Capital market in agriculture, risk management in agriculture, agricultural policy & trade, structure and organization of capital, rural credit market, livestock economics, resource economics, fishery economics, environmental economics.

Department of Agricultural Statistics:

Probability and probability distribution, correlation & regression analysis, biometry, quality control & sequential analysis, design of experiment.

Department of Agribusiness and Marketing:

Management of cooperatives, organization of cooperatives, rural institutions & rural development, agricultural commodity and market structure, conducts and performance analysis, agricultural price transmission analysis, agribusiness, marketing of farm inputs and output, marketing of livestock and poultry products, value chain of agricultural products, agricultural and trade policies with general and partial equilibrium analysis, time series analysis, demand for food commodities, supply response in agriculture, impacts studies on rural development, social safety net programme and out come, food security and world trade and marketing.

Department of Rural Sociology:

Social demography, social change & modernization, rural social development, cultural change, socialization & personality development, social movement, rural & regional planning.

INSTITUTE OF AGRIBUSINESS AND DEVELOPMENT STUDIES

Production and marketing of inputs like seed, fertilizers, irrigation, farm machinery and credit, production of crops, vegetables, livestock and poultry and fishery, marketing of farm products, agro-processed products and manufactured food products, food safety and marketing.

FACULTY OF AGRICULTURAL ENGINEERING & TECHNOLOGY

Department of Farm Structure & Environmental Engineering:

Soil mechanics, soil stabilization, geomorphology, construction technology, agricultural waste management, concrete technology.

Department of Farm Power & Machinery:

Farm machinery design, testing and mechanization, draught animal technology, process engineering and agro-industry, drying and storage of agricultural crops agricultural systems and energy modeling, plant protection machinery, engineering economy and management, post-harvest technology, crop processing, solar and other renewable energy systems, biomass technology, computer and information technology, application of electrical engineering and electronics for agriculture and agro-industries, soil machine mechanics, mechanization and extension studies.

Department of Irrigation and Water Management:

Groundwater development and management, surface water modeling and flood forecasting, water lifting devices improvement and management, soil-water-plant relationship : crop-water modeling, on-farm water management for cost-effective irrigation, coastal land and water management, surface and subsurface hydrological process, water recycling and wastewater quality management, land drainage and reclamation, climate change and drought management, domestic water supply and management, environmental impacts of water resources projects, holistic water management policy and modeling, the unknown in water resources utilization, irrigation command area development, water requirement of crops, irrigation water conveyance system, soil and water quality, water market.

Department of Food Technology and Rural Industries:

Food science and technology, food nutrition, food process engineering, fruit and vegetable technology, cereal science and technology.

Department of Computer Science and Mathematics:

Wireless sensor networks, opportunistic networks, agro-informatics, data mining and knowledge discovery, data cleansing, data pre-processing, pattern recognition, neural networks, adhoc networking, data security, genetic algorithm and data structures, natural language processing.

FACULTY OF FISHERIES

Department of Fisheries Biology and Genetics:

Reproductive physiology and breeding of fish and fisheries organisms, environmental impacts on the biology of fish and fisheries organisms, brood stock management, induced breeding and gamete preservation, hatchery management, hybridization, selective breeding, sex reversal, production of monosex fish population, chromosome and gene manipulation, endocrinology, aquatic biodiversity and indigenous fish conservation, stock improvement using molecular tools, marker assisted selection of species and cryopreservation of gene pool of aquaculture species.

Department of Aquaculture:

Spawning, nursing and rearing of important fish species, biology and feeding habits of small fishes, optimization of culture techniques, integrated culture of rice, fish, poultry etc, fish nutrition, diagnosis, prevention and control of fish and shell fish diseases, fish pathology and parasitology, culture of aquarium fishes.

Department of Fisheries Management:

Ecology, limnology, water quality and pond dynamics, plankton culture, aquatic toxicology, inland and marine fisheries management, environmental impact on aquatic organisms, mangrove fisheries, and climate change and fisheries.

Department of Fisheries Technology:

Fish harvesting and processing, quality assurance of fish products, analytical and microbiological study of harvested fish and fishery products, novel products from sea weds and consumers response, livelihood assessment of fisher folk and fish processor, world market and fish export.

Curricula for MS in Anatomy

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
VAH 601 Avian Anatomy		1
VAH 602 Avian Anatomy Lab		1
VAH 603 Neuro Anatomy		1
VAH 604 Neuro Anatomy Lab		1
VAH 605 Histochemistry		1
VAH 606 Histochemistry Lab		1
VAH 607 Endocrine and Reproductive Anatomy		2
Elective Courses	(4 Credits)	
VAH 617 Comparative Anatomy of Blood Vascular and Lymphatic System		1
VAH 614 Comparative Anatomy of Blood Vascular and Lymphatic System Lab		1
VAH 619 Histology of Digestive and Respiratory System		1
VAH 616 Histology of Digestive and Respiratory System Lab		1
VAH 621 Histology of Blood Vascular and Lymphatic System		1
VAH 618 Histology of Blood Vascular and Lymphatic System Lab		1
VAH 623 Histology of Urogenital System		1
VAH 620 Histology of Urogenital System Lab		1
VAH 6 25 Comparative Anatomy of Sense organ		1
VAH 622 Comparative Anatomy of Sense organ Lab		1
VAH 627 Anatomy of Laboratory and Zoo Animals		1
VAH 624 Anatomy of Laboratory and Zoo Animals Lab		1
VAH 636 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
VAH 609 Ruminant Anatomy		1
VAH 610 Ruminant Anatomy Lab		1
VAH 611 Veterinary Histology		1
VAH 612 Veterinary Histology Lab		1
VAH 613 Development Anatomy		2
VAH 615 Evolutionary Anatomy		2
Elective Courses	(4 Credits)	2
VAH 629 Equine Anatomy		1
VAH 626 Equine Anatomy Lab		1
VAH 631 Comparative Anatomy of locomotive System		1
VAH 628 Comparative Anatomy of locomotive System Lab		1
VAH 633 Comparative Anatomy of Digestive and Respiratory System		1
VAH 630 Comparative Anatomy of Digestive and Respiratory System Lab		1
VAH 635 Comparative Anatomy of Urogenital System		1
VAH 632 Comparative Anatomy of Urogenital System Lab		1
VAH 637 Pet Animal Anatomy		1
VAH 634 Pet Animal Anatomy Lab		1
VAH 639 Anatomy of Immune System		2
VAH 636 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
VAH 636 Research Work	(2 Credits)	2 (S/U)
VAH 638 Evaluation of Thesis	(5 Credits)	5
VAH 640 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Microbiology

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
VMH 601 General Virology		2
VMH 603 Systematic Virology		2
VMH 605 Molecular Microbiology		2
VMH 607 Immunology and Serology		2
Elective Courses	(4 Credits)	
VMH 629 Food Hygiene		2
VMH 616 Food Hygiene Lab		2
VMH 615 Epidemiology		2
VMH 617 Vaccinology		2
VMH 604 Vaccinology Lab		2
VMH 619 Microbial Biotechnology		2
VMH 606 Microbial Biotechnology Lab		2
VMH 621 Microbiology of Reproductive System		2
VMH 608 Microbiology of Reproductive System Lab		2
VMH 623 Avian Health and Hygiene		2
VMH 633 Meat and Milk Inspection		2
VMH 635 Food Borne Infection and Intoxication		2
VMH 649 Sanitary Microbiology		2
VMH 651 Food Laws and Regulation		2
VMH 610 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
VMH 609 General Bacteriology		2
VMH 611 Systematic Bacteriology		2
VMH 613 Fungi, Mycoplasma, Chlamydia and Rickettsia		2
VMH 602 Microbiological Methods		2
Elective Courses	(4 Credits)	2
VMH 637 Veterinary Public Health		2
VMH 639 Zoonoses		2
VMH 641 Environmental Microbiology		2
VMH 643 Environmental Hygiene and Sanitation		2
VMH 653 Microbial Toxins		2
VMH 625 Avian Microbes		2
VMH 627 Microbial Genetics		2
VMH 655 Industrial Microbiology		2
VMH 657 Food Microbiology		2
VMH 622 Food Microbiology Lab		2
Stat 547 Advanced Biostatistics		2
VMH 610 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
VMH 610 Research Work	(2 Credits)	2 (S/U)
VMH 612 Evaluation of Thesis	(5 Credits)	5
VMH 614 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Veterinary Public Health and Food Hygiene

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
VMH 629 Food Hygiene		2
VMH 631 Epidemiology		2
VMH 633 Meat and Milk Inspection		2
VMH 635 Food Borne Infection and Intoxication		1
VMH 616 Food Hygiene Lab		1
Elective Courses	(4 Credits)	
VMH 601 General Virology		2
VMH 603 Systematic Virology		2
VMH 607 Immunology and Serology		2
VMH 645 Food Plant Sanitation, Inspection and Quality Control		2
VMH 618 Food Plant Sanitation, Inspection and Quality Control Lab		1
VMH 647 Abattoir Hygiene and Management		2
VMH 620 Abattoir Hygiene and Management Lab		1
VMH 649 Sanitary Microbiology		2
VMH 651 Food Laws and Regulation		2
VMH 626 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
VMH 637 Veterinary Public Health		2
VMH 639 Zoonoses		2
VMH 641 Environmental Microbiology		2
VMH 643 Environmental Hygiene and Sanitation		2
Elective Courses	(4 Credits)	
VMH 605 Molecular Microbiology		2
VMH 609 General Bacteriology		2
VMH 611 Systematic Bacteriology		2
VMH 613 Fungi, Mycoplasma, Chlamydia and Rickettsia		2
VMH 653 Microbial Toxins		2
VMH 655 Industrial Microbiology		2
VMH 657 Food Microbiology		2
VMH 622 Food Microbiology Lab		1
VMH 659 Animal Products and Hurdle technology		2
VMH 624 Animal products and Hurdle technology Lab		1
Stat 547 Advanced Biostatistics		2
VMH 626 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
VMH 626 Research Work	(2 Credits)	2 (S/U)
VMH 628 Evaluation of Thesis	(5 Credits)	5
VMH 630 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Pathology

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
VPATH 601 Advanced General Pathology		2
VPATH 602 Clinical Pathology		2
VPATH 603 Immunopathology		2
VPATH 605 Avian Pathology		2
Elective Courses	(4 Credits)	
VPATH 604 Oncology		2
VPATH 606 Molecular Pathology and Biotechnology		2
VPATH 611 Pathology of Zoonotic Diseases		2
VPATH 613 Pathology of Extraneous Poisoning		2
VPATH 614 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
VPATH 607 Pathology of Metabolic Diseases		2
VPATH 608 Histopathology		2
VPATH 609 Pathology of Bacterial and Viral Diseases		2
VPATH 610 Necropsy		2
Elective Courses	(4 Credits)	2
VPATH 615 Pathology of Fungal, Rickettsial and Chlamydial Diseases		2
VPATH 612 Experimental Animal Pathology		2
VPATH 617 Pathology of Parasitic Diseases		2
VPATH 619 Reproductive Pathology		2
VPATH 621 Laboratory Animal Pathology		2
VPATH 623 Comparative Pathology		2
VPATH 614 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
VPATH 614 Research Work	(2 Credits)	2 (S/U)
VPATH 616 Evaluation of Thesis	(5 Credits)	5
VPATH 618 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Parasitology

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
VPAR 602 Techniques in Helminthology		1
VPAR 604 Techniques in Protozoology and Entomology		1
VPAR 601 Parasitic Ecology and Epidemiology		2
VPAR 603 Protozoology		2
VPAR 605 Entomology		2
Elective Courses	(4 Credits)	
VPAR 615 Zoonotic Parasites		2
VPAR 617 Parasites of Large Animals		2
VPAR 619 Parasites of Pet and Laboratory Animals		2
VPAR 621 Biology of Arthropod Vectors		2
VPAR 608 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
VPAR 607 General Parasitology and Helminthology		2
VPAR 609 Molecular and Biochemical Parasitology		2
VPAR 611 Immuno Parasitology		2
VPAR 613 Malacology		2
Elective Courses	(4 Credits)	
VPAR 606 Clinical Parasitology		2
VPAR 623 Avian Parasitology		2
VPAR 625 Parasites of Zoo and Wild Animals		2
VPAR 608 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
VPAR 608 Research Work	(2 Credits)	2 (S/U)
VPAR 610 Evaluation of Thesis	(5 Credits)	5
VPAR 612 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Pharmacology

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
VPHA 601 General Pharmacology		2
VPHA 603 Chemotherapy		2
VPHA 605 General Toxicology		2
VPHA 607 Phyto-Toxicology		2
Elective Courses	(4 Credits)	
VPHA 602 Techniques in Pharmacology		2
VPHA 617 Pharmaceutical Chemistry		2
VPHA 619 Pharmacology of Autacoids and Locally Acting Drugs		2
VPHA 621 Immunopharmacology		2
VPHA 623 Neonatal Pharmacology		2
VPHA 625 Environmental Toxicology		2
VPHA 627 Systemic Toxicology		2
VPHA 629 Food Toxicology		2
VPHA 610 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
VPHA 609 Systemic Pharmacology		2
VPHA 611 Endocrine and Nutritional Pharmacology		2
VPHA 613 Toxicology of Pesticides and Other Toxic Agents		2
VPHA 615 Applied Toxicology		2
Elective Courses	(4 Credits)	2
VPHA 631 Autonomic and Neuro Pharmacology		2
VPHA 633 Chemotherapy of Parasitic Diseases		2
VPHA 635 Chemotherapy of Neoplastic Diseases		2
VPHA 637 Toxicology of Drugs and Chemical Residues		2
VPHA 639 Teratology		2
VPHA 604 Pharmacy		2
VPHA 606 Experimental Pharmacology		2
VPHA 608 Techniques in Toxicology		2
VPHA 610 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
VPHA 610 Research Work	(2 Credits)	2 (S/U)
VPHA 612 Evaluation of Thesis	(5 Credits)	5
VPHA 614 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Physiology

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
VPHY 601 Cell Physiology and Body Fluids		2
VPHY 603 Cardio-vascular Physiology		2
VPHY 605 Endocrine Physiology		2
VPHY 607 Avian Physiology		2
Elective Courses	(4 Credits)	
VPHY 617 Physiology of Metabolism		2
VPHY 619 Ruminant Physiology		2
VPHY 621 Wild life Physiology		2
VPHY 623 Radiobiology		2
VPHY 625 Techniques in Physiology		2
VPHY 627 Physiological Chemistry		2
VPHY 602 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
VPHY 609 Digestion Physiology		2
VPHY 611 Physiology of Excretion and Electrolyte Balance		2
VPHY 613 Physiology of Reproduction		2
VPHY 615 Physiology of Integration		2
Elective Courses	(4 Credits)	2
VPHY 629 Nutritional Physiology		2
VPHY 631 Immuno Physiology		2
VPHY 633 Ethology		2
VPHY 635 Electrophysiology		2
VPHY 637 Environmental Physiology		2
VPHY 639 Biocongugation in Life Science		2
VPHY 641 Physiology of Vitamins and Minerals		2
VPHY 602 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
VPHY 602 Research Work	(2 Credits)	2 (S/U)
VPHY 604 Evaluation of Thesis	(5 Credits)	5
VPHY 606 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Medicine

July-December Semester		
Compulsory Courses	(10 Credits)	**Credits**
VM 601 General Bovine Medicine		2
VM 603 General Avian Medicine		2
VM 605 Caprine and Ovine Medicine		2
VM 607 Preventive Animal Medicine		2
VM 602 Veterinary Epidemiology		2
Elective Courses	(4 Credits)	
VM 604 Veterinary Diagnostic Medicine		2
VM 617 Equine and Porcine Medicine		2
VM 619 Preventive Avian Medicine		2
VM 621 Veterinary Clinical Immunology		2
VM 623 Laboratory Animal Medicine		2
VM 625 Veterinary Forensic Medicine and Animal Welfare		2
VM 612 Research Work	(3 Credits)	3 (S/U)
Total Credit		17
January-June Semester		
Compulsory Courses	(10 Credits)	**Credits**
VM 609 Special Bovine Medicine		2
VM 611 Special Avian Medicine		2
VM 613 Canine and Feline Medicine		2
VM 615 Zoonotic Diseases and Community Medicine		2
VM 606 Veterinary Clinical Practice		2
Elective Courses	(4 Credits)	2
VM 608 Veterinary Clinical Propaedeutics and Therapeutics		2
VM 610 Seminar		1
VM 627 Veterinary Paediatrics		2
VM 629 Zoo and Wild Animal Medicine		2
VM 631 Dairy Animal Health		2
VM 633 Veterinary Dermatology		2
VM 635 Veterinary Comparative Medicine		2
VM 612 Research Work	(3 Credits)	3 (S/U)
Total Credit		17
Thesis Semester		
VM 612 Research Work	(2 Credits)	2 (S/U)
VM 614 Evaluation of Thesis	(5 Credits)	5
VM 616 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		44

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Surgery

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
VSO 601 General Surgical Sciences		2
VSO 602 Anaesthetic Practices		1
VSO 603 Anaesthesiology		2
VSO 604 Clinical Practice of Small Animal Surgery		1
VSO 605 Small Animal Surgery		2
Elective Courses	(4 Credits)	
VSO 612 Experimental Surgery		2
VSO 613 Opthalmic Surgery		2
VSO 614 Operation Theatre & Intensive Care Techniques		2
VSO 615 Urology		2
VSO 617 Orthopedic Surgery		2
VSO 619 Transplantation Techniques		2
VSO 621 Gastrointestinal Surgery		2
VSO 624 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
VSO 606 Diagnostic Imaging		1
VSO 608 Clinical Surgery		2
VSO 610 Clinical Practice of Fluid Therapy and Blood Transfusion		1
VSO 607 Radiology		1
VSO 609 Large Animal Surgery		2
VSO 611 Fluid Therapy and Blood Transfusion		1
Elective Courses	(4 Credits)	2
VSO 616 Zoo and Laboratory Animal Anesthesia		2
VSO 618 Clinical management of Lameness in Animals		1
VSO 623 Lameness in Animals		1
VSO 625 Neurosurgery		2
VSO 620 Cardiovascular Surgery		2
VSO 627 Soundless and Shoeing		1
VSO 622 Seminar		1
VSO 624 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
VSO 624 Research Work	(2 Credits)	2 (S/U)
VSO 626 Evaluation of Thesis	(5 Credits)	5
VSO 628 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Theriogenology

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
VSO 629 Obstetrics		2
VSO 630 Reproductive Surgery		2
VSO 631 Andrology and Clinical Artificial Insemination		2
VSO 632 Techniques in Andrology and Artificial Insemination		2
Elective Courses	(4 Credits)	
VSO 637 Reproductive Biotechnology		2
VSO 638 Techniques in Reproductive Biotechnology		2
VSO 639 Reproductive Immunology		2
VSO 641 Neonate and Calf Health Management		2
VSO 643 Reproductive Hormones		2
VSO 644 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
VSO 633 Gynaecology		2
VSO 635 Reproductive Health Management of Farm Animals		2
VSO 634 Clinics (Theriogenology)		2
VSO 636 Techniques in Obstetrics and Gynaecology		2
Elective Courses	(4 Credits)	
VSO 645 Udder Health Management		1
VSO 640 Clinical Practices of Udder Health and Mastitis		1
VSO 647 Reproductive Health Management of Pet, Zoo and Wild Animals		2
VSO 649 Reproductive Disorders		2
VSO 642 Seminar		1
VSO 644 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
VSO 644 Research Work	(2 Credits)	2 (S/U)
VSO 646 Evaluation of Thesis	(5 Credits)	5
VSO 648 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Agronomy

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
AGRON 501 Advanced Crop Husbandry		2
AGRON 503 Crop Yield Processes		2
AGRON 505 Seed Technology		2
AGRON 507 Weed Management		2
Elective Courses	(4 Credits)	
AGRON 517 Weed Biology and Ecology		2
AGRON 519 Cropping System		2
AGRON 521 Environmental Agronomy		2
AGRON 523 Production of Post-harvest Management of Minor Crops		2
AGRON 506 Research Work		3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
AGRON 509 Soil Fertility Management in Crop Production		2
AGRON 511 Water Management in Crop Production		2
AGRON 513Agronomic Research Methodology		1
AGRON 515 Stress Agronomy		2
AGRON 502 Methods in Agronomic Research		1
Elective Courses	(4 Credits)	
AGRON 525 Cropland Agroforestry		2
AGRON 527 Agricultural Systems		1
AGRON 504 Practice of Agricultural Systems		1
AGRON 529 Fodder Production and Pasture Management		2
AGRON 506 Research Work		3 (S/U
Total Credit		15
Thesis Semester		
AGRON 506 Research Work	(2 Credits)	2
AGRON 508 Evaluation of Thesis	(5 Credits)	5
AGRON 510 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Horticulture

July-December Semester		
Compulsory Courses	(9 Credits)	**Credits**
HORT 501 Advanced Fruit Production		2
HORT 503 Advanced Vegetable Production		2
HORT 505 Advanced Research Methodology		2
HORT 507 Ornamental and Landscape Horticulture		2
HORT 502 Methods in Advanced Research		1
Elective Courses	(4 Credits)	
HORT 517 Homestead Agroforestry		2
HORT 519 Horticultural Seed Physiology		2
HORT 521 Horticultural Plant Biotechnology		2
HORT 523 Advanced Nursery Management		2
HORT 525 Storage Management of Horticultural Crops		2
HORT 504 Research work	(3 Credits)	3 (S/U)
Total Credit		16
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
HORT 509 Spices and Plantation Crops		2
HORT 511 Postharvest Technology of Fruits and Vegetables		2
HORT 513 Fruit Crop Management		2
HORT 515 Vegetable Crop Management		2
Elective Courses	(4 Credits)	
HORT 527 Vegetable Seed Technology		2
HORT 529 Physiology of Horticultural Crop Yield		2
HORT 531 Production and Management of Medicinal Plants		2
HORT 533 Plant Growth Regulators in Horticulture		2
HORT 504 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
HORT 504 Research Work	(2 Credits)	2 (S/U)
HORT 506 Evaluation of Thesis	(5 Credits)	5
HORT 508 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		41

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Plant Pathology

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
P. Path 501 Plant Pathogenesis and Genetics of Plant Pathogens		2
P. Path 503 Epidemiology and Forecasting of Plant Diseases		2
P. Path 505 Plant Disease Management		2
P. Path 502 Methods in Plant Pathology		2
Elective Courses	(4 Credits)	
P. Path 509 Mycology		2
P. Path 511 Plant Bacteriology		2
P. Path 513 Plant Virology		2
P. Path 515 Plant Nematology		2
P. Path 517 Soil-borne Disease		2
P. Path 510 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
P. Path 504 Clinical Plant Pathology		2
P. Path 506 Experimental Plant Pathology		2
P. Path 507 Integrated Disease Management		2
P. Path 508 Seed Pathology		2
Elective Courses	(4 Credits)	
P. Path 519 Disease Resistance in Plants		2
P. Path 521 Post Harvest Pathology		2
P. Path 523 Agro-Social Forest Pathology		2
P. Path 525 Molecular Plant Pathology		2
P. Path 527 Storage Microbiology		2
P. Path 529 Design of Experiment		2
P. Path 510 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
P. Path 510 Research Work	(2 Credits)	2 (S/U)
P. Path 512 Evaluation of Thesis	(5 Credits)	5
P. Path 514 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Soil Science

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
SS 501 Advanced Soil Physics		3
SS 503 Advanced Soil Chemistry		3
SS 505 Soil Degradation and Conservation		2
Elective Courses	(4 Credits)	
SS 513 Soil Survey		2
SS 515 Waste Management and Biofertilizer		2
SS 517 Soil and Water Pollution		2
SS 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
SS 507 Advanced Soil Fertility and Plant Nutrition		3
SS 509 Advanced Soil Microbiology		3
SS 511 Research Methodology		2
Elective Courses	(4 Credits)	
SS 519 Soil Ecology and Biodiversity		2
SS 521 Soil, Plant and Water Analysis		2
SS 523 Soil Water		2
SS 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
SS 502 Research Work	(2 Credits)	2
SS 504 Evaluation of Thesis	(5 Credits)	5
SS 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Entomology

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
ENTOM 501 Insect Taxonomy		2
ENTOM 503 Insect Physiology		2
ENTOM 505 Insect Ecology		2
ENTOM 507 Pesticide Management		2
Elective Courses	(4 Credits)	
ENTOM 517 Insect Biodiversity and Evaluation		2
ENTOM 519 Storage Entomology		2
Stat 545 Experimental Design		2
ENTOM 504 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
ENTOM 509 Insect Nutrition and Biochemistry		2
ENTOM 511 Insect Pest Management		2
ENTOM 513 Insect Pathology		2
ENTOM 515 Entomological Technique		1
ENTOM 502 Practice in Entomological Technique		1
Elective Courses	(4 Credits)	
ENTOM 521 Insecticide Toxicology		2
ENTOM 523 Industrial Entomology		2
ENTOM 525 Insect Morphology		2
ENTOM 504 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
ENTOM 504 Research Work	(2 Credits)	2 (S/U)
ENTOM 506 Evaluation of Thesis	(5 Credits)	5
ENTOM 508 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Crop Botany

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
CBot 501 Plant Morphology and Phylogeny		2
CBot 503 Plant Physiology		2
CBot 505 Plant Ecology		2
CBot 507 Environmental Pollution and Agriculture		2
Elective Courses	(4 Credits)	
CBot 519 Economic Botany		2
CBot 521 Developmental Plant Physiology		2
CBot 523 Mangrove Ecology		2
CBot 525 Plant Nutrition		2
CBot 527 Crop Physiology		2
CBot 529 Crop Research Methodology		2
CBot 531 Plant Biodiversity and Conservation		2
CBot 533 Advanced Plant Sistematics		
CBot 535 Radiation Ecology		2
CBot 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(10 Credits)	**Credits**
CBot 509 Plant Anatomy		2
CBot 511 Plant Metabolism		2
CBot 513 Agro-Climatology		2
CBot 515 Stress Physiology		2
CBot 517 Seed Biology		2
Elective Courses	(4 Credits)	
CBot 537 Developmental Plant Anatomy		2
CBot 539 Crop Ecology		2
CBot 541 Developmental Agroforestry		2
CBot 543 Crop Biotechnology		2
CBot 545 Plant Tissue Culture		2
CBot 547 Phytochemical Ecology		2
CBot 549 Plant Molecular Physiology		2
CBot 551 Pollination Biology		2
CBot 502 Research work	(3 Credits)	3 (S/U)
Total Credit		17
Thesis Semester		
CBot 502 Research Work	(2 Credits)	2 (S/U)
CBot 504 Evaluation of Thesis	(5 Credits)	5
CBot 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		42

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Agricultural Extension Education

July-December Semester		
Compulsory Courses	(9 Credits)	**Credits**
AGEXT 501 Development Communication and Information Systems		2
AGEXT 503 Research Methods in Behavioural Sciences		2
AGEXT 505 Extension for Rural Entrepreneurship Development		2
AGEXT 507 Human Resource Development		2
AGEXT 502 Community-based Resource Management		1
Elective Courses	(4 Credits)	
AGEXT 517 Food Security and Poverty Reduction		2
AGEXT 519 Participatory Technology Development		2
AGEXT 521 Market Led Extension		2
AGEXT 523 Agricultural Journalism		2
AGEXT 525 Extension Strategies for Disaster Management		2
AGEXT 506 Research Work		3 (S/U)
Total Credit		16
January-June Semester		
Compulsory Courses	(9 Credits)	**Credits**
AGEXT 509 Fundamentals of Rural Development		2
AGEXT 511 Diffusion and Adoption of Innovation		2
AGEXT 513 Extension Project Management		2
AGEXT 515 Social and Cultural Anthropology		2
AGEXT 504 Orientation to Rural Development Programmes		1
Elective Courses	(4 Credits)	
AGEXT 527 Group Dynamics and Rural Leadership		2
AGEXT 529 Sustainable Agricultural Development		2
AGEXT 531 Gender Sensitizations for Development		2
AGEXT 533 Distance Education		2
Stat 541 Advanced Statistical Methods in Social Sciences		2
AGEXT 506 Research Work	(3 Credits)	3 (S/U)
Total Credit		16
Thesis Semester		
AGEXT 506 Research Work	(2 Credits)	2 (S/U)
AGEXT 508 Evaluation of Thesis	(5 Credits)	5
AGEXT 510 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		42

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Genetics and Plant Breeding

July-December Semester		
Compulsory Courses	(10 Credits)	**Credits**
GPB 501 Molecular Genetics		2
GPB 503 Molecular Plant Breeding		2
GPB 505 Biometrical and Population Genetics		3
GPB 507 Biotechnology and Genetic Engineering		2
GPB 502 Biotechnology and Molecular Genetics		1
Elective Courses	(4 Credits)	
GPB 517 Development and Physiological Genetics		2
GPB 519 Stress Breeding		2
GPB 521 Distant Hybridization and Chromosome Manipulation		2
GPB 523 Multivariate Statistics for Researchers		1
GPB 508 Computational Multivariate Statistics		1
GPB 510 Research work	(3 Credits)	3 (S/U)
Total Credit		17
January-June Semester		
Compulsory Courses	(10 Credits)	**Credits**
GPB 509 Cytology and Cytogenetics		2
GPB 511 Principles of Genetics		2
GPB 513 Advanced Plant Breeding		2
GPB 515 Research Methodology and Scientific Writing		2
GPB 504 Practical Cytogenetics		1
GPB 506 Practical Plant Breeding		1
Elective Courses	(4 Credits)	
GPB 525 Crop Evolution and Plant Genetic Resources		2
GPB 527 Hybrid Breeding		2
GPB 529 Experimentation and Data Analysis		2
GPB 510 Research work	(3 Credits)	3 (S/U)
Total Credit		17
Thesis Semester		
GPB 510 Research work	(2 Credits)	2 (S/U)
GPB 512 Evaluation of Thesis	(5 Credits)	5
GPB 514 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		44

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Agricultural Chemistry

July-December Semester		
Compulsory Courses	(9 Credits)	**Credits**
ACHEM 501 Fertilizer Technology and Usage		2
ACHEM 503 Colloids and Nuclear Chemistry		2
ACHEM 505 Mineral Nutrition and Plant Growth		2
ACHEM 507 Formulation and Safety of Pesticides		1
ACHEM 502 Analyses of Fertilizer, Plant, Soil and Water		2
Elective Courses	(4 Credits)	
ACHEM 517 Waste Management and Green Chemistry		2
ACHEM 519 Water Science		2
ACHEM 521 Applied Phytochemistry		2
ACHEM 523 Applied Bioorganic Chemistry		2
ACHEM 506 Research work	(3 Credits)	3 (S/U)
Total Credit		16
January-June Semester		
Compulsory Courses	(9 Credits)	**Credits**
ACHEM 509 Instrumental Methods of Analysis		2
ACHEM 511 Pesticide Chemistry		2
ACHEM 513 Chemistry and Technology of Agroindustrial Crops		2
ACHEM 515 Environmental Chemistry		2
ACHEM 504 Research Methodology		1
Elective Courses	(4 Credits)	
ACHEM 525 Chemistry of Manures and Fertilizers		2
ACHEM 527 Chemistry of Plant Products		2
ACHEM 529 Applied Plant Science and Rhizosphere Technology		2
ACHEM 531 Aquatic Geochemistry		2
ACHEM 506 Research work	(3 Credits)	3 (S/U)
Total Credit		16
Thesis Semester		
ACHEM 506 Research Work	(2 Credits)	2 (S/U)
ACHEM 508 Evaluation of Thesis	(5 Credits)	5
ACHEM 510 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		42

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Biochemistry and Molecular Biology

July-December Semester		
Compulsory Courses	(9 Credits)	**Credits**
BMB 501 Enzymes and Enzyme Technology		2
BMB 503 Metabolism and Nutritional Biochemistry		3
BMB 505 Principles of Recombinant DNA Technology		2
BMB 502 Bioinformatics		2
Elective Courses	(4 Credits)	
BMB 515 Biochemistry of Plant and Microbes		2
BMB 517 Animal Biochemistry		2
BMB 519 Biochemistry of Fisheries		2
BMB 521 Special Topics in Biochemistry		2
BMB 523 Chemical Biochemistry and Immunochemistry		2
BMB 506 Research work	(3 Credits)	3 (S/U)
Total Credit		16
January-June Semester		
Compulsory Courses	(9 Credits)	**Credits**
BMB 507 Advanced Chemistry of Carbohydrates, Lipids and Nucleic acids		2
BMB 509 Advanced Molecular Biology		2
BMB 511 Protein Structure and Functions		2
BMB 513 Principles of Biochemical Techniques		3
Elective Courses	(4 Credits)	
BMB 525 Biochemistry of Plant Hormones and Biocides		2
BMB 527 Special Topics in Biochemistry		2
BMB 529 Animal Hormones		2
BMB 531 Environmental Biochemistry		2
BMB 504 Design of Biochemical Experiment		2
BMB 506 Research work	(3 Credits)	3 (S/U)
Total Credit		16
Thesis Semester		
BMB 506 Research Work	(2 Credits)	2 (S/U)
BMB 508 Evaluation of Thesis	(5 Credits)	5
BMB 510 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		42

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Agroforestry

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
AF 501 Agroforestry Systems and Practices		3
AF 503 Agroforest Botany		3
AF 505 Agroforestry Research Methodology		2
Elective Courses	(4 Credits)	
AF 513 Silvicultural Practices in Agroforestry		2
AF 515 Medicinal Plants and Non-wood Products		2
AF 517 Soil Productivity and Conservation in Agroforestry		2
AF 519 Pest Management in Agroforestry		2
AF 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
AF 507 Agroforest Management Technology		3
AF 509 Social Forestry and Rural Development		3
AF 511 Component Interaction in Agroforestry		2
Elective Courses	(4 Credits)	
AF 521 Wood Quality and Wood Technology		2
AF 523 Land-use Planning in Agroforestry		2
AF 525 Environmental Protection in Agroforestry		2
AF 527 Water Conservation and Watershed Management		2
AF 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
AF 502 Research Work	(2 Credits)	2 (S/U)
AF 504 Evaluation of Thesis	(5 Credits)	5
AF 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Environmental Science

July-December Semester		
Compulsory Courses	(9 Credits)	**Credits**
ENVS 501 Fundamentals of Environmental Science		2
ENVS 503 Advanced Climatology		2
ENVS 505 Land Degradation and Management		2
ENVS 507 Natural Resource Management		2
ENVS 502 Research Methodology and Scientific Writing		1
Elective Courses	(4 Credits)	
ENVS 517 Population and Environment		2
ENVS 519 Advanced Ecology		2
ENVS 521 Management of Urban Environment		2
ENVS 523 Biodiversity and Conservation		2
ENVS 525 Micrometeorology and Data Processing		2
ENVS 527 Energy and Environment		2
ENVS 529 Introduction of GIS and Geographic Mapping		2
ENVS 531 Environment Law, Ethics and Politics		2
ENVS 506 Research work	(3 Credits)	3 (S/U)
Total Credit		16
January-June Semester		
Compulsory Courses	(9 Credits)	**Credits**
ENVS 509 Air-Water Pollution and Protection		2
ENVS 511 Greenhouse Gases and Global Warming		2
ENVS 513 Disaster Management		2
ENVS 515 Agro-Chemical Pollution and Management		2
ENVS 504 Environmental Analysis		1
Elective Courses	(4 Credits)	
ENVS 533 Environmental Impact Assessment and Regulation		2
ENVS 535 Waste Management		2
ENVS 537 Boundary Layer Climate		2
ENVS 539 Environmental Toxicology		2
ENVS 541 Heavy Metal Pollution		2
ENVS 543 Environmental Auditing		2
ENVS 545 Environmental Journalism		2
ENVS 506 Research work	(3 Credits)	3 (S/U)
Total Credit		16
Thesis Semester		
ENVS 506 Research Work	(2 Credits)	2 (S/U)
ENVS 508 Evaluation of Thesis	(5 Credits)	5
ENVS 510 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		42

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Biotechnology

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
Biotech 501 Molecular Cell Biology		2
Biotech 503 Molecular Genetics		2
Biotech 505 Gene Expression and Regulation		2
Biotech 507 Biometry and Bioinformatics		2
Elective Courses	(4 Credits)	
Biotech 517 Plant Cell, Tissue and Organ Culture		2
Biotech 519 Animal Cell Technology		2
Biotech 521 Environmental Biotechnology and Biosafety		2
Biotech 504 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
Biotech 509 Recombinant DNA Technology		2
Biotech 511 Genetic Engineering and Biotechnology		2
Biotech 513 Molecular Markers and Diagnostics		2
Biotech 515 Molecular Techniques		2
Biotech 502 Practice in Molecular Techniques		1
Elective Courses	(4 Credits)	
Biotech 523 Enzymology and Enzyme Technology		2
Biotech 525 Biopharming and Bioengineering		2
Biotech 527 Immunology and Immunotechnology		2
Biotech 504 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
Biotech 504 Research Work	(2 Credits)	2 (S/U)
Biotech 506 Evaluation of Thesis	(5 Credits)	5
Biotech 508 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Seed Science and Technology

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
SST 501 Seed Quality Control and Regulatory System		2
SST 503 Seed Pathology		2
SST 505 Seed Entomology		2
SST 507 Seed Industry Development		2
Elective Courses	(4 Credits)	
SST 517 Seed Ecology		2
SST 519 Hybrid Seed Technology		2
SST 521 Seed Storage Technology		2
SST 523 Seed Marketing		2
SST 525 Plant Nutrition for Seed Crops		2
SST 502 Seed Analysis and Laboratory Techniques		2
SST 506 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
SST 509 Seed Morphology and Physiology		2
SST 511 Genetics of Seed Yield and Seed Quality		2
SST 513 Seed Technology of Field Crops		2
SST 515 Seed Technology of Horticultural Crops		2
Elective Courses	(4 Credits)	
SST 527 GM Seed and Biosafety		2
SST 529 Seed Biochemistry		2
SST 531 Principles of Insect Pest Management		2
SST 533 Seed Processing and Storage Technology		2
SST 504 Seed Health Technology		2
SST 506 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
SST 506 Research Work	(2 Credits)	2 (S/U)
SST 508 valuation of Thesis	(5 Credits)	5
SST 510 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Animal Breeding and Genetics

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
ABG 501 Genetics		2
ABG 503 Quantitative Genetics		2
ABG 505 Animal Reproduction		2
Stat 529 Methods of Biostatistics		2
Elective Courses	(4 Credits)	
ABG 513 Herd fertility and Reproductive Management		2
ABG 504 Computer Usage in Animal Breeding and Genetics		2
ABG 506 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
ABG 507 Animal Breeding		2
ABG 509 Poultry Breeding		2
ABG 511 Artificial Insemination and Biotechnology		2
ABG 502 Biometrics of Genetics and Animal Breeding		2
Elective Courses	(4 Credits)	
ABG 515 Molecular Genetics and Genetic Engineering		2
ABG 517 Poultry Reproduction		2
ABG 506 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
ABG 506 Research Work	(2 Credits)	2 (S/U)
ABG 508 Evaluation of Thesis	(5 Credits)	5
ABG 510 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Animal Science

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
AS 501 Goat and Sheep Production		2
AS 503 Buffalo Production		2
AS 505 Integrated Livestock Farming		2
Stat 529 Methods of Biostatistics		2
Elective Courses	(4 Credits)	
AS 515 Draught Animal Production		2
AN 501 Ruminant Nutrition		2
DS 501 Dairy Cattle Production		2
DS 503 Dairy Farm Planning and Management		2
ABG 505 Animal Reproduction		2
AS 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
AS 507 Beef Cattle Production		2
AS 509 Wool, Hides and Skins Technology		2
AS 511 Meat Science and Technology		2
AS 513 Livestock Waste Management and Environment		2
Elective Courses	(4 Credits)	
AS 517 Wildlife Conservation and Environment		2
ABG 507 Animal Breeding		2
AM 513 Marketing of Livestock and Poultry		2
AN 511 Feed Processing and Evaluation		2
CSM 535 Computer Applications		2
AS 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
AS 502 Research Work	(2 Credits)	2 (S/U)
AS 504 Evaluation of Thesis	(5 Credits)	5
AS 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Animal Nutrition

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
AN 501 Ruminant Nutrition		2
AN 503 Advances Livestock Feeding		2
AN 505 Non-ruminant Nutrition		2
BMB 517 Animal Biochemistry		2
Elective Courses	(4 Credits)	
AN 515 Grassland Technology		2
AN 517 Animal Feed Industry		2
AS 501 Goat and Sheep Production		2
DS 501 Dairy Cattle Production		2
VPHY 629 Nutritional Physiology		2
Stat 529 Methods of Biostatistics		2
AN 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
AN 507 Nutrition and Reproduction		2
AN 509 Avian Nutrition		2
AN 511 Feed Processing and Evaluation		2
AN 513 Advanced Techniques in Nutrition Studies		2
Elective Courses	(4 Credits)	
AN 510 Human Nutrition and Dietetics		2
ABG 507 Animal Breeding		2
AS 511 Meat Science and Technology		2
AGRON 529 Fodder Production and Pasture Management		2
AN 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
AN 502 Research Work	(2 Credits)	2 (S/U)
AN 504 Evaluation of Thesis	(5 Credits)	5
AN 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Dairy Science

July-December Semester		
Compulsory Courses	(9 Credits)	**Credits**
DS 501 Dairy Cattle Production		2
DS 503 Dairy Farm Planning and Management		2
DS 505 Dairy Cattle Feeds and Fodder		2
DS 502 Dairy Cattle Feeds and Fodder Research Methodology		1
Stat 529 Methods of Biostatistics		2
Elective Courses	(4 Credits)	
ABG 505 Animal Reproduction		2
AN 501 Ruminant Nutrition		2
FPM 505 Farm Machinery		2
AM 513 Marketing of Livestock and Poultry		2
BMB 517 Animal Biochemistry		2
AE 509 Agricultural Project Planning, Evaluation and Monitoring		2
AS 505 Integrated Livestock Farming		2
AS 503 Buffalo Production		2
DS 506 Research work	(3 Credits)	3 (S/U)
Total Credit		16
January-June Semester		
Compulsory Courses	(9 Credits)	**Credits**
DS 507 Dairy Manufacture		2
DS 509 Microbiology of Milk and Milk Products		2
DS 511 Quality Control of Dairy Products		2
DS 513 Dairy Chemistry		2
DS 504 Manufacturing and Analytical techniques of milk and Dairy Products		1
Elective Courses	(4 Credits)	
ABG 507 Animal Breeding		2
FTRI 510 Food Process Laboratory		2
AN 511 Feed Processing and Evaluation		2
ENVS 535 Waste Management		2
DS 506 Research work	(3 Credits)	3 (S/U)
Total Credit		16
Thesis Semester		
DS 506 Research work	(2 Credits)	2 (S/U)
DS 508 Evaluation of Thesis	(5 Credits)	5
DS 510 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		42

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Poultry Science

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
PS 501 Hatchery Management		2
PS 503 Poultry Nutrition and Nutritional Biotechnology		2
PS 505 Parent Stock and Commercial Layer Management		2
Stat 529 Methods of Biostatistics		2
Elective Courses	(4 Credits)	
PS 511 Poultry Farm Planning and Management		2
ABG 501 Genetics		2
PS 513 Poultry Behaviour and Welfare		2
PS 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
PS 507 Parent Stock and Commercial Broiler Management		2
PS 509 Poultry Processing and Products Technology		2
ABG 509 Poultry Breeding		2
CSM 535 Computer Applications		2
Elective Courses	(4/5 Credits)	
ABG 517 Poultry Reproduction		2
PS 515 Duck and Quail Production		2
AE 509 Agricultural Project Planning, Monitoring and Evaluation		3
AM 513 Marketing of Livestock and Poultry		2
PS 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15/16
Thesis Semester		
PS 502 Research Work	(2 Credits)	2 (S/U)
PS 504 Evaluation of Thesis	(5 Credits)	5
PS 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40/41

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Agricultural Economics (Production Economics)

July-December Semester		
Compulsory Courses	(10 Credits)	**Credits**
AE 501 Economics of Agricultural Development		4
AE 503 Production Economics		3
AE 505 Econometrics		3
Elective Courses	(2 Credits)	
AE 511 Farming System		2
AE 513 Fisheries Economics		2
AE 515 Gender Relations in Agriculture		2
AE 517 Economics of Irrigation and Water Resource		2
AE 519 Livestock Economics		2
AE 521 Benefit-Cost Analysis		2
AE 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(6 Credits)	**Credits**
AE 507 Farm Management		3
AE 509 Agricultural Project Planning, Monitoring and Evaluation		3
Elective Courses	(6/7 Credits)	
AM 507 Market Structure Economics		3
AM 509 Agricultural Price Analysis and Policy		3
AM 511 Agribusiness Marketing		3
AF 505 Micro Credit Management		3
AF 507 Risk Management in Agriculture		3
AF 509 Resources and Environmental Economics		4
AE 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15/16
Thesis Semester		
AE 502 Research Work	(2 Credits)	2 (S/U)
AE 504 Evaluation of Thesis	(5 Credits)	5
AE 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40/41

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Agricultural Economics (Finance)

July-December Semester		
Compulsory Courses	(6 Credits)	**Credits**
AF 501 Financial Management in Agriculture		3
AF 503 Capital Market in Agriculture		3
Elective Courses	(6/7 Credits)	
Option-I		
AF 511 Agricultural Policy and Trade		3
AF 513 Rural Credit Project Analysis		3
Option-II		
AE 501 Economics of Agricultural Development		4
AE 503 Production Economics		3
AE 505 Econometrics		3
AF 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15/16
January-June Semester		
Compulsory Courses	(10 Credits)	**Credits**
AF 505 Micro Credit Management		3
AF 507 Risk Management in Agriculture		3
AF 509 Resources and Environmental Economics		4
Elective Courses	(3 Credits)	
AM 507 Market Structure Economics		3
AM 509 Agricultural Price Analysis and Policy		3
AM 511 Agribusiness Marketing		3
AF 502 Research work	(3 Credits)	3 (S/U)
Total Credit		16
Thesis Semester		
AF 502 Research Work	(2 Credits)	2 (S/U)
AF 504 Evaluation of Thesis	(5 Credits)	5
AF 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		41/42

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Agricultural Statistics

July-December Semester		
Compulsory Courses	(11 Credits)	**Credits**
Stat 501 Statistical Inference		2
Stat 503 Non-parametric Statistics		2
Stat 505 Biostatistics		2
Stat 507 Advanced Design of Experiments		2
Stat 509 Operations Research		2
Stat 502 Lab Work and Field Trip-1		1
Elective Courses	(4 Credits)	
Stat 521 Econometric Methods		2
Stat 523 Stochastic Processes		2
Stat 525 Multivariate Analysis		2
Stat 527 Statistical Methods in Genetics		2
Stat 529 Methods of Biostatistics *		2
Stat 531 Design of Agricultural Experiments*		2
Stat 506 Research work	(3 Credits)	3 (S/U)
Total Credit		18
January-June Semester		
Compulsory Courses	(11 Credits)	**Credits**
Stat 511 Sampling Distribution		2
Stat 513 Regression and Correlation Analysis		2
Stat 515 Sampling Technique		2
Stat 517 Design of Experiments		2
Stat 519 Biometry		2
Stat 504 Lab Work and Field Trip-2		1
Elective Courses	(4 Credits)	
Stat 533 Matrix Algebra and Numerical Analysis		2
Stat 535 Economic Statistics		2
Stat 537 Demography		2
Stat 539 Statistical Quality Control		2
Stat 541 Advanced Statistical Methods in Social Sciences *		2
Stat 543 Engineering Statistics*		2
Stat 545 Experimental Design*		2
Stat 547 Advanced Biostatistics *		2
Stat 506 Research work	(3 Credits)	3 (S/U)
Total Credit		18
Thesis Semester		
Stat 506 Research Work	(2 Credits)	2 (S/U)
Stat 508 Evaluation of Thesis	(5 Credits)	5
Stat 510 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		46

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Note : * Mark indicates course for other departments

Curricula for MS in Agricultural Economics (Agribusiness and Marketing)

July-December Semester		
Compulsory Courses	(7 Credits)	**Credits**
AM 501 Marketing Management		3
AM 503 Agribusiness Marketing Research		2
AM 505 Human Resource Management		2
Elective Courses	(5/6 Credits)	
Option-I		
AE 501 Economics of Agricultural Development		4
AE 503 Production Economics		3
AE 505 Econometrics		3
Option-II		
AM 513 Marketing of Livestock and Poultry		2
AM 515 International Marketing		2
AM 517 Supply Chain Management in Agribusiness		2
AM 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15/16
January-June Semester		
Compulsory Courses	(9 Credits)	**Credits**
AM 507 Market Structure Economics		3
AM 509 Agricultural Price Analysis and Policy		3
AM 511 Agribusiness Marketing		3
Elective Courses	(3/4 Credits)	
AF 505 Micro Credit Management		3
AF 507 Risk Management in Agriculture		3
AF 509 Resource and Environmental Economics		4
AM 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15/16
Thesis Semester		
AM 502 Research Work	(2 Credits)	2 (S/U)
AM 504 Evaluation of Thesis	(5 Credits)	5
AM 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40/41/42

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Rural Sociology

July-December Semester		
Compulsory Courses	(9 Credits)	**Credits**
RS 501 Sociology of Rural Development		3
RS 503 Research Methods for Sociology		3
RS 505 Agrarian Societies		3
Elective Courses	(4 Credits)	
RS 513 Rural Social Structure		2
RS 515 Sociology of Youth Development		2
RS 517 Environmental Sociology		2
RS 519 Sociology of Health and Illness		2
RS 521 Social Development in South Asia		2
RS 523 Quantitative Analysis of Social Data		2
RS 525 Sociology of Urban Life		3
RS 502 Research work	(3 Credits)	3 (S/U)
Total Credit		16
January-June Semester		
Compulsory Courses	(9 Credits)	**Credits**
RS 507 Sociological Theory		3
RS 509 Rural Social Change		3
RS 511 Social Anthropology		3
Elective Courses	(4 Credits)	
RS 527 Social Demography		2
RS 529 Household and Gender Studies		2
RS 531 Rural Poverty Studies		2
RS 533 Sociology of Mass Communication		2
RS 535 Sociology of Education		2
RS 537 Women in Development		2
RS 539 Social Forestry		2
RS 502 Research work	(3 Credits)	3 (S/U)
Total Credit		16
Thesis Semester		
RS 502 Research Work	(2 Credits)	2 (S/U)
RS 504 Evaluation of Thesis	(5 Credits)	5
RS 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		42

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Farm Structure

July-December Semester		
Compulsory Courses	(9 Credits)	**Credits**
FS 501 Soil Engineering		2
FS 503 Farmstead Planning and Design		2
FS 505 Environmental Pollution and Control		2
CSM 533 Engineering Mathematics		3
Elective Courses	(4 Credits)	
FS 515 Hydraulic and Foundation Structure		2
FS 517 Construction Management		2
FS 519 Wastewater Engineering Design		2
FS 521 Lineal and Neural Analysis		2
FS 523 Water Supply and Sanitation		2
FS 502 Research work	(3 Credits)	3 (S/U)
Total Credit		16
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
FS 507 Concrete Technology		2
FS 509 Agricultural Waste Management		2
FS 511 Greenhouse Principles and Design		2
FS 513 Research Methodology and Analysis		2
Elective Courses	(4 Credits)	
FS 525 Packaging and Storage Engineering		2
FS 527 Industrial Waste Management		2
FS 529 Rural Infrastructure Development		2
FS 531 Structural Analysis and Computation		2
FS 533 Timber Technology		2
FS 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
FS 502 Research Work	(2 Credits)	2 (S/U)
FS 504 Evaluation of Thesis	(5 Credits)	5
FS 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		41

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Farm Power and Machinery

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
FPM 501 Farm Power		3
FPM 503 Bio-resources Engineering		2
CSM 533 Engineering Mathematics		3
Elective Courses	(4 Credits)	
FPM 511 Equipment and Implement Design		2
FPM 513 Renewable Energy systems		2
FPM 515 Operation Research		2
FPM 517 Greenhouse Technology		2
FPM 519 Agricultural Machinery Testing Evaluation and Maintenance		2
FPM 521 Modeling of Bio-systems		2
FPM 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
FPM 505 Farm Machinery		3
FPM 507 Instrumentation and Research Design		2
FPM 509 Advanced Agricultural Process Engineering		3
Elective Courses	(4 Credits)	
FPM 523 Agricultural Systems Engineering		2
FPM 525 Plant Protection Mach. and Equipment		2
FPM 527 Soil Implements Mechanics		2
FPM 529 Computational Fluid Dynamics		2
CSM 561 Computer Programming and Application		2
IWM 531 Irrigation System Evaluation		2
Stat 543 Engineering Statistics		2
FPM 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
FPM 502 Research Work	(2 Credits)	2 (S/U)
FPM 504 Evaluation of Thesis	(5 Credits)	5
FPM 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Irrigation and Water Management

July-December Semester		
Compulsory Courses	(9 Credits)	**Credits**
IWM 501 Irrigation System Design		2
IWM 503 Surface Water Hydrology		2
IWM 505 Economics of Water Resources Projects		2
CSM 537 Mathematics for Water Engineering		3
Elective Courses	(4 Credits)	
IWM 515 Soil–Water–Plant Relationship		2
IWM 517 River Engineering and Flood Management		2
IWM 519 Hydraulic Design		2
IWM 521 Flow and Transport Through Porous Media		2
IWM 523 Water and Environment		2
IWM 525 GIS in Water Resources		2
CSM 561 Computer Programming and Application		2
IWM 502 Research work	(3 Credits)	3 (S/U)
Total Credit		16
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
IWM 507 Drainage Engineering		2
IWM 509 Groundwater Development		2
IWM 511 Open Channel Flow		2
IWM 513 Irrigation System Planning and Management		2
Elective Courses	(4 Credits)	
IWM 527 Crop Climatology		2
IWM 529 Water Resources Planning		2
IWM 531 Irrigation System Evaluation		2
IWM 533 Watershed Management		2
IWM 535 Statistical Hydrology		2
SS 521 Soil, Plant and Water Analysis		2
IWM 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
IWM 502 Research Work	(2 Credits)	2 (S/U)
IWM 504 Evaluation of Thesis	(5 Credits)	5
IWM 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		41

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Food Engineering

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
FTRI 501 Advanced Dairy Engineering		2
FTRI 503 Advanced Food and Industrial Microbiology		2
FTRI 505 Reaction Kinetics and Reactor Design		2
FTRI 502 Food Process Engineering Laboratory		2
Elective Courses	(4 Credits)	
FTRI 515 Technology of Cereal Products		2
FTRI 517 Technology of Fruits and Vegetable Products		2
FTRI 519 Novel Food Processing Technique		2
FTRI 521 Fermentation and Food Biotechnology		2
FTRI 523 Computation and Modeling in Food Industry		2
FTRI 525 Food Machinery Design		2
FTRI 504 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
FTRI 507 Advanced Unit Operations in Process and Food Engineering		2
FTRI 509 Thermal Processing and Freezing of Food		2
FTRI 511 Food Quality Assurance and Safety		2
FTRI 513 Advanced Food Chemistry and Nutrient Technology		2
Elective Courses	(4 Credits)	
FTRI 527 Technology of Animal Products		2
FTRI 529 Organic Food Production and Processing		2
FTRI 531 Food Additives and Toxicology		2
FTRI 533 Food Industry Wastes Management		2
FTRI 504 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
FTRI 504 Research Work	(2 Credits)	2 (S/U)
FTRI 506 Evaluation of Thesis	(5 Credits)	5
FTRI 508 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Food Technology

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
FTRI 535 Food Science		2
FTRI 537 Food Plant Design and Management		2
FTRI 539 Food Quality Control and Packaging		2
FTRI 541 Food Chemistry and Nutrition		2
Elective Courses	(4 Credits)	
FTRI 549 Sugar Engineering and Technology		2
FTRI 551 Dairy Engineering		2
FTRI 517 Technology of Fruits and Vegetable Products		2
CSM 533 Engineering Mathematics		2
FTRI 512 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
FTRI 543 Technology 0f Food Products		2
FTRI 545 Food Engineering		2
FTRI 547 Food Microbiology		2
FTRI 510 Food Process Laboratory		2
Elective Courses	(4 Credits)	
FTRI 515 Technology of Cereal Products		2
FTRI 527 Technology of Animal Products		2
FTRI 553 Technology of Plant Products		2
FTRI 555 Food Biotechnology		2
Stat 557 Engineering Statistics		2
CSM 561 Computer Programming and Application		2
FTRI 512 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
FTRI 512 Research Work	(2 Credits)	2 (S/U)
FTRI 514 Evaluation of Thesis	(5 Credits)	5
FTRI 516 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Computer Science

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
CSM 501 Structured Programming Language		3
CSM 503 Advanced Database Systems		3
CSM 505 Discrete Mathematics		2
Elective Courses	(4 Credits)	
CSM 513 Mathematical Analysis for Computer Science		2
CSM 515 Numerical Methods		2
CSM 517 Computer Arithmetic		2
CSM 519 Advanced Artificial Intelligent		2
CSM 521 Symbolic Machine Learning – I		2
CSM 523 Advanced Syntactic Pattern Recognition		2
CSM 525 Data Mining		2
CSM 527 Computer Communication and Networks		2
CSM 529 Multimedia Systems		2
CSM 531 Project Management		2
CSM 533 Engineering Mathematics*		3
CSM 535 Computer Application*		2
CSM 537 Mathematics for Water Engineering*		3
CSM 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
CSM 507 Computer Graphics and Animation		3
CSM 509 Advanced Data Structures and Algorithms		3
CSM 511 Graph Theory		2
Elective Courses	(4 Credits)	
CSM 539 Simulation and Modeling		2
CSM 541 Symbolic Machine Learning – II		2
CSM 543 Speech Recognition		2
CSM 545 Machine Translation		2
CSM 547 Distributed Computing Systems		2
CSM 549 Elements of Cryptography		2
CSM 551 Computational Geometry		2
CSM 553 Mathematical Programming		2
CSM 555 Neural Networks		2
CSM 557 Petri Net Theory and Modeling of System		2
CSM 559 Fuzzy System		2
CSM 561 Computer Programming and Application*		2
CSM 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
CSM 502 Research Work	(2 Credits)	2 (S/U)
CSM 504 Evaluation of Thesis	(5 Credits)	5
CSM 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Note: * Mark indicates course for other departments

Curricula for MS in Fisheries Biology and Genetics

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
FBG 501 Biology of Fishes		2
FBG 503 Advanced Fish Physiology		2
FBG 505 Fish Population and Conservation Genetics		2
FBG 507 Molecular Genetics		2
Elective Courses	(4 Credits)	
FBG 517 Biodiversity of Aquatic Animals		2
FBG 519 Fishery Systematic and Evolution		2
FBG 521 Experimental Design and Genetic Data Analysis		2
AQ 503 Fish Health Management		2
AQ 507 Advanced Aquaculture Feed Technology		2
FBG 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
FBG 509 Fish Breeding and Stock Improvement		2
FBG 511 Endocrinology of Aquatic Animals		2
FBG 513 Fish Genetic Engineering and Biotechnology		2
FBG 515 Shellfish Biology		2
Elective Courses	(4 Credits)	
FBG 523 Fish Behaviour		2
FBG 525 Embryology of Fishes		2
FBG 527 Advanced Ichthyology		2
FBG 529 Biology of Non-Piscine Aquatic Vertebrates		2
FM 507 Water Quality and Environmental Impacts		2
FT 525 Project Design and Management		2
FBG 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
FBG 502 Research Work	(2 Credits)	2 (S/U)
FBG 504 Evaluation of Thesis	(5 Credits)	5
FBG 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Aquaculture

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
AQ 501 Advance Freshwater Aquaculture		2
AQ 503 Fish Health Management		2
AQ 505 Aquafarm Operation		2
AQ 507 Advanced Aquaculture Feed Technology		2
Elective Courses	(4 Credits)	2
AQ 517 Mariculture		2
AQ 519 Culture of Fish Food Organisms		2
AQ 521 Advanced Fish Parasitology		2
AQ 523 Aquaculture Impact		2
Stat 529 Methods of Biostatistics		2
AQ 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
AQ 509 Advanced Coastal Aquaculture		2
AQ 511 Integrated Aquaculture		2
AQ 513 Aquaculture Nutrition		2
AQ 515 Advanced Fish Pathology		2
Elective Courses	(4 Credits)	
AQ 525 Aquarium Fish Culture		2
AQ 527 Mangrove Aquaculture		2
AQ 529 Fish Immunology		2
AQ 531 Geographical Information System in Aquaculture		2
FM 507 Water Quality and Environmental Impacts		2
FT 525 Project Design and Management		2
FBG 509 Fish Breeding and Stock Improvement		2
AQ 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
AQ 502 Research Work	(2 Credits)	2 (S/U)
AQ 504 Evaluation of Thesis	(5 Credits)	5
AQ 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Fisheries Management

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
FM 501 Limnology		2
FM 503 Inland Fisheries Management		2
FM 505 Advanced Aquatic Ecology		2
FM 507 Water Quality and Environmental Impacts		2
Elective Courses	(4 Credits)	2
FM 517 Ecology of Fishes		2
FM 519 Riverine Fisheries Management		2
FM 521 Community Based Fisheries Management		2
FM 523 Wetland Ecosystem and Fisheries Biodiversity		2
FM 525 Laboratory Techniques for Water Quality and Pollution Analysis		2
AQ 511 Integrated Aquaculture		2
AQ 503 Fish Health Management		2
Stat 529 Methods of Biostatistics		2
FM 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
FM 509 Advanced Fish Population Dynamics		2
FM 511 Aquatic Environmental Pollution and Toxicology		2
FM 513 Marine Fisheries Management		2
FM 515 Fisheries Resources		2
Elective Courses	(4 Credits)	
FM 527 Oceanography		2
FM 529 Mangrove Exploitation and Management		2
FM 531 Aquatic Soil Science		2
FM 533 Biology and Management of Aquatic Plants		2
FM 535 Coastal and Marine Ecology		2
FBG 505 Fish Population and Conservation Genetics		2
FT 525 Project Design and Management		2
FM 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
FM 502 Research Work	(2 Credits)	2 (S/U)
FM 504 Evaluation of Thesis	(5 Credits)	5
FM 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for MS in Fisheries Technology

July-December Semester		
Compulsory Courses	(8 Credits)	**Credits**
FT 501 Fish Preservation Technology		2
FT 503 Fish Processing Technology		2
FT 505 Advanced Fisheries Microbiology		2
FT 507 Advanced Fishing Technology		2
Elective Courses	(4 Credits)	
FT 517 Analytical Techniques in Fish Processing		2
FT 519 Industrial Fishery Management		2
AQ 507 Advanced Aquaculture Feed Technology		2
Stat 529 Methods of Biostatistics		2
FM 511 Aquatic Environmental Pollution and Toxicology		2
FT 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
January-June Semester		
Compulsory Courses	(8 Credits)	**Credits**
FT 509 Fishery Products Technology		2
FT 511 Quality Control of Fish and Fishery Products		2
FT 513 Fish Processing Biochemistry		2
FT 515 Biotechnology in Fish Processing		2
Elective Courses	(4 Credits)	
FT 521 Fish Microbiological Techniques		2
FT 523 Fishery By-products Technology		2
FT 525 Project Design and Management		2
AQ 513 Aquaculture Nutrition		2
FT 502 Research work	(3 Credits)	3 (S/U)
Total Credit		15
Thesis Semester		
FT 502 Research Work	(2 Credits)	2 (S/U)
FT 504 Evaluation of Thesis	(5 Credits)	5
FT 506 Thesis Defense	(3 Credits)	3
Total Credits		10
GRAND TOTAL		40

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory

Curricula for the degree of MBA in Agribusiness

Semester 1		
Compulsory Courses	(15 Credits)	**Credits**
ADS 501 Introduction to Agribusiness		3
ADS 503 Agribusiness Communication		3
ADS 505 Agribusiness Management		3
ADS 507 Production and Operation Management		3
ADS 509 Business Statistics and Computer Application		3
Elective Courses	(3 Credits)	
ADS 531 Microeconomics		3
ADS 533 Micro-Finance Management		3
ADS 535 Marketing of Agricultural Products		3
Total Credit		18
Semester 2		
Compulsory Courses	(15 Credits)	**Credits**
ADS 511 Human Resource Management		3
ADS 513 Financial Management in Agribusiness		3
ADS 515 Trade Policy in Agriculture		3
ADS 517 Agribusiness Marketing Management		3
ADS 519 Management Accounting		3
Elective Courses	(3 Credits)	
ADS 537 Resource Economics		3
ADS 539 Advertising and Sales Management		3
ADS 541 Supply Chain Management in Agriculture		3
Total Credit		18
Semester 3		
Compulsory Courses	(15 Credits)	**Credits**
ADS 521 Entrepreneurship Development		3
ADS 523 Strategic Management		3
ADS 525 Business Law and Ethics		3
ADS 527 Marketing Research in Agribusiness		3
ADS 529 Agricultural Project Appraisal, Monitoring and Evaluation		3
Elective Courses	(3 Credits)	
ADS 543 Risk Management in Agribusiness		3
ADS 545 Managerial Communication for Agribusiness		3
ADS 547 Managerial Economics		3
ADS 549 Capital Budgeting and Investment Analysis		3
Total Credits		18
Semester 4		
Internship	(10 Credits)	**Credits**
ADS 502 Evaluation of Thesis	(6 Credits)	6
ADS 504 Thesis Defense	(4 Credits)	4
Total Credit		10
GRAND TOTAL		64

Odd Number= Theory	Even Number = Practical
S = Satisfactory	U = Unsatisfactory


Nuclear Scientist Dr. M. A Wazed Miah
Ph.D Dormitory
পরমাণু বিজ্ঞানী ড. এম. এ. ওয়াজেদ মিয়া
পি-এইচ.ডি ডরমেটরি


প্রফেসর মুহাম্মদ হোসেন কেন্দ্রীয় ল্যাবরেটরি
Professor Muhammed Hossain Central Laboratory