

**FACULTY OF AGRIBUSINESS MANAGEMENT**  
**Curriculum for Bachelor of Science in Agricultural**  
**Economics (Hons.)**



**Sher-e-Bangla Agricultural University**

**Sher-e-Bangla Nagar, Dhaka-1207, Bangladesh**

**October, 2019**

**Courtesy: IQAC (QAP: B003), HEQEP, UGC**



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Published by  
**Institutional Quality Assurance Cell, SAU (QAP: B003), HEQEP, UGC**

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**Disclaimer**

Every effort has been made to make this curriculum enriched with accurate information and correct entries as recommended by the 72th Academic Council meeting of SAU. However, IQAC of SAU apologizes for any typographical errors. The SAU reserves the right to alter/cancel course(s) and their contents, admission requirements, etc.

**Funded by:**

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## Vice-Chancellor's Message

It is a great privilege for me to introduce the Sher-e-Bangla Agricultural University (SAU) located in the heart of Dhaka city on a beautiful green campus inherited from the then Bangladesh Agricultural Institute (BAI). The Sher-e-Bangla Agricultural University has started its journey as a University from 2001 with only one faculty - the Faculty of Agriculture. The other three faculties namely, Agribusiness Management, Animal Science & Veterinary Medicine and Fisheries, Aquaculture & Marine Science came into being in the year- 2006, 2012 and 2016 respectively.

The mission of Sher-e-Bangla Agricultural University is based upon the firm belief that agricultural education particularly higher education provides a critical pathway to leadership development in academic and research fields as well as in achieving sustainable agricultural development and socio-economic progress of the country.

Presently, SAU is offering undergraduate and post graduate programs under course credit system with the aim to producing researchers, academicians and field level extension specialists in the field of Agribusiness management. New technologies are being developed by potential researchers through Sher-e-Bangla Agricultural University Research System (SAURES) while the Outreach program is set to transfer the newly developed technologies to the farmers field for raising agricultural productivity.

The present edition of the outcome based curriculum of Bachelor of Science in Agricultural Economics (Hons.) contains the updated courses and their contents, intended learning outcomes as taught in the under graduate program of the Faculty of Agribusiness Management. I believe that the information provided in this book will be of much helpful to all concern including the students. Appreciation goes to IQAC-HEQEP project, UGC, Ministry of Education and the World Bank for their financial support in the preparation of this Curriculum. I congratulate the IQAC management team and teachers of this University whose active work and dedication have made it possible to bring out this important academic document.

Special thanks is extended to Professor Dr. Md. Asaduzzaman Khan, Director, IQAC, SAU for his tremendous and sincere effort to improve the standard of education in Sher-e-Bangla Agricultural University.

(Prof. Dr. Kamal Uddin Ahamed)  
Vice-Chancellor



## **Pro-Vice-Chancellor's Message**

It is indeed an honor and privilege for me to be a part of curriculum development process. It makes me happy to publish this outcome based curriculum of Bachelor of Business Administration in Agribusiness (Major in Management/Finance/Marketing) prepared by Institutional Quality Assurance Cell (IQAC) and Agribusiness Management Faculty, Sher e Bangla Agricultural University (SAU). This undergraduate curriculum has been developed in a standard format which contains vision, mission, programme objectives, programme learning outcomes (PLO), course objectives, intended learning outcomes, teaching and assessment strategies.

Self- Assessment Committee gratefully acknowledges and appreciates the devotion of the Faculty Members for their significant contribution to prepare the curriculum handbook.

I am confident that this academic document will greatly help our students and others stakeholders to know about our academic programs and related matters. I would like to extend my sincere appreciation to the IQAC Management Team, Faculty Members, HEQEP, UGC, Ministry of Education and the World Bank for their assistance for accomplishing this assignment.

**(Prof. Dr. Md. Sekender Ali)**  
Pro-Vice-Chancellor &  
Convener, Curriculum Committee  
Sher-e-Bangla Agricultural University



## Dean's Words

In modern agricultural education system, agribusiness management is gaining rapid popularity among students and academicians. However, growing global population has resulted into disparity between market demand and supply side of agricultural production. There is need a market oriented and practical based education system which fulfills the objective of the growth and development of the economy. We believe the economic development in next decade will be resulting from present wave of agricultural revolution which transforms the subsistence agriculture into commercial agriculture. To comply with constantly changing internal and external factors as well as to be part of advanced world, we have included latest courses in our curriculum to make it as international standard.

I am feeling great to present this volume containing course details of the Bachelor of Science in Agricultural Economics. I am confident that this publication will help our students and others to learn about our academic programs and related matters. It would also serve as a ready reference for those who wish to suggest improvement/ addition/ deletion to our courses.

I sincerely appreciate Director and other members of Institutional Quality Assurance Cell (IQAC) who took initiative to compile an outcome based curriculum of the undergraduate programs of the Faculty of Agribusiness Management as part of this IQAC project.

I would like to extend my sincere appreciation to the faculty members, committee members all who involved including Vice Chancellor, Pro-Vice Chancellor, the HEQEP sub project team, UGC, Ministry of Education and the World Bank in the compilation and publication of this important curriculum handbook.

A handwritten signature in black ink, appearing to read 'Mizanur Rahman Sarker'.

(Prof. Dr. Md. Mizanur Rahman Sarker)

Dean

Faculty of Agribusiness Management

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## **IQAC Director's Words**

The SAU's Institutional Quality Assurance Cell (IQAC) has been working to ensuring the standards of higher education at SAU. The IQAC of SAU is involved in the enhancement of teaching-learning processes, curriculum development, programs for self-assessment and future academic improvement. The Ministry of Education (MoE) with the assistance of the World Bank and UGC has undertaken a Higher Education Quality Enhancement Project (HEQEP) to improve the quality of teaching-learning of the tertiary educational institutions of the country. The updated outcome based curriculum of undergraduate level will allow students to become better graduates to face the challenges of agricultural economics in order to ensure development of agriculture and agro-industry. The Sher-e-Bangla Agricultural University started academic activities of Agribusiness Management Faculty from 2006. It has now become essential to update and modernize the curriculum to meet the immediate and long term demand of the country. At this point of view we took initiative to rearrange, update and upgrade the syllabus of Bachelor of Science in Agricultural Economics (Hons.) to outcome based curriculum under the HEQEP-IQAC project. Initially it was not an easy task to update the whole syllabus of Agricultural Economics (Hons.) within the short period but the difficult task became easy when the dean, chairmen, curriculum committee members of IQAC and teachers of the departments extended their fullest concentration towards developing the outcome based curriculum.

I express my gratitude to the Vice-Chancellor and Pro-Vice Chancellor of the University, Dean, Faculty of Agribusiness Management, all academic and members of curricula committee, members of the IQAC-project management team, members of self-assessment committee and academic council.

I like to take this opportunity of conveying my deep sense of gratitude to UGC, HEQEP, MoE and the World Bank for their cooperation and financial support in the preparation of this volume. I am sure that this undergraduate curriculum shall serve as a reference not only to the student of SAU but to all those actively engaged with Agribusiness Management and Agricultural Economics Education system in Bangladesh.

A handwritten signature in black ink, appearing to read 'Asaduzzaman Khan'. The signature is fluid and cursive.

**(Dr. Md. Asaduzzaman Khan)**  
Director, IQAC and Member Secretary,  
Curriculum Approval Committee

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## **Overview of Sher-e-Bangla Agricultural University**

Sher-e-Bangla Agricultural University (SAU) is situated in the center of the capital city, Dhaka with excellent communication facilities to reach the University. The SAU campus stands on 86.97 acres (35.21 ha) of picturesque land covered by green plantations.

The "Sher-e-Bangla Agricultural University Act 2001" was passed in the National Parliament of Bangladesh on 09 July 2001 through the transformation of the then Bangladesh Agricultural Institute (BAI) into Sher-e-Bangla Agricultural University. The foundation stone of the University was laid by the then Honorable Prime Minister Sheikh Hasina on 15 July 2001. Earlier this Institute was established on December 11, 1938 by Sher-e-Bangla A.K. Fazlul Huq, the then Chief Minister of undivided Bengal as the Bengal Agricultural Institute (BAI). BAI was the oldest and the pioneer agricultural institution in Bangladesh. The figure of this establishment was renamed as the "East Pakistan Agricultural Institute" in 1947. After the independence of Bangladesh in 1971, the name of the institute was accordingly changed to the Bangladesh Agricultural Institute (BAI). Since its inception in 1938, the BAI had been functioning as a "Faculty of Agriculture" under Dhaka University. Meanwhile, with the establishment of Bangladesh Agricultural University (BAU) at Mymensingh in 1961 its academic affiliation was transferred to BAU in 1964 till its up gradation to Sher-e-Bangla Agricultural University in 2001.

The Sher-e-Bangla Agricultural University was set up with a mission to extend the higher agricultural education and committed to promote sustainable research in diverse areas of agricultural sciences and to offer extension services for the welfare of the farming communities of Bangladesh.

Since its inception the SAU was functioning as a mono faculty university; The Faculty of Agriculture. Later on Faculty of Agribusiness Management in 2006, Animal Science & Veterinary Medicine in 2012 and Fisheries and Aquaculture Faculty in 2016 were established and started functioning.

## **Overview of the Faculty of Agribusiness Management**

The globalizations of agriculture, new technologies, nutritional and environmental consciousness are creating the need for industries to hire graduates with strong backgrounds in applied economics, business principles, and leadership. The demand of agricultural economists is caused by the development of agricultural raw material processing, food industry and bio-economy sector as whole, as well rapid growth of the agricultural infrastructure, increasing uncertainty of the agricultural business environment. To cope up with the situations Sher-e-Bangla Agricultural University had felt the necessity to introduce agricultural business related degree under the Faculty of Agribusiness Management (ABM) in 2006. The Faculty of Agribusiness Management is fulfilling the necessity of emerging business related purposes through offering business related programs. The Faculty of ABM of SAU is one of the most important faculties of the university which offering Bachelor of Business Administration in Agribusiness (Major in Management/Finance/Marketing) and Bachelor of Science in Agricultural Economics (Hons.) at undergraduate level. All the departments of this faculty are offering MS or MBA in different disciplines. Agricultural economics and agribusiness programs offer their graduates unique exposure to agricultural markets, policy, and production systems, which differentiates them from business programs.

### **Vision**

The vision of the faculty is to be the leading center providing responsive education, training and services to produce graduates who will be the future leaders of all sectors of agribusiness and agricultural economics as education, research, agribusiness and development for contributing to the national and global agro-based economy with their earned knowledge, skill, innovativeness and commitment for development of agriculture and agro-industry.

### **Mission**

- Provide innovative quality education with the aim of producing trained and skilled human resources in the fields of agribusiness and agricultural economics.
- Enable to communicate effectively, both written and orally, economic concepts, business decision-making, and agricultural and natural resource concepts.
- Develop the skills to fit into a business, agency, or academic environment and use economic concepts to quantify and analyze issues related to their employer's issues.
- Aware with issues related to the agricultural development and poverty alleviation, natural resource policies, and rural community development.

- Conduct problem oriented research and technology transfer in the field of agricultural economics and agribusiness to help for sustainable development in agricultural sector and national economy.

### **Program Educational Objectives (PEO)**

The program is designed to meet the challenges that our graduates are likely to face throughout their professional career. Students should be able to use concepts, approaches and methods from BSc in Agri. Econ (Hons.) curricula in their career or future studies to understand and evaluate issues, plans, or projects. The program educational objectives are as follows:

- To provide a broad, innovative and quality education in the areas of agricultural economics and agribusiness;
- To understand firm and farm level decision rules for the efficient operation of enterprises and the institutional structure and use of agricultural marketing systems;
- To analyze changes in market and general economic conditions in a broad array of settings and be able to determine the impact on various groups affected by those changes;
- To generate critical understanding of agro-industrialization and relationships among producers, processors, manufacturers and consumers of commodities involved in the agribusiness sector;
- To analyze the farm and market situations to solve day to day and long term problems in the agribusiness sector of the economy;
- To use their knowledge in agribusiness management to run their own individual firms and agribusiness enterprises including consulting;
- To craft a sound knowledge of supply chain management in agribusiness, business and strategic decision making concepts;
- To develop creative management and good communication skills of the graduate;
- To Provide a theoretical and practical orientation to the graduate to be able to provide solutions to organizational problems;
- To participate in agribusiness research and knowledge creation;
- To enable graduates to gain knowledge of the subject areas as per international standard to develop their career;
- To work with collaborative and creative approach in the target oriented goals.
- To develop creativity, entrepreneurship, management skill and good communication skills of the graduate;
- To engage in life-long learning and enhance commitment towards effective citizenship and social responsibility.

## Program Learning Outcomes (PLO)

- Acquire and apply **knowledge** of decision rules and policy planning for agricultural sciences to prepare themselves for better careers;
- Develop **intellectual skills** required for critical thinking, problem solving and creativity in the field of agriculture;
- Identify, formulate and provide creative, innovative and **effective solution to agricultural problems**;
- Develop **analytical skill** for enhancing decision making ability. numeracy, statistical and computing skills are necessary to develop this skill;
- Enhance **entrepreneurship and innovation skills** for career development in agriculture economy;
- **Communicate effectively in written and spoken form.** Communicates effectively to diverse group of peoples using appropriate traditional and emerging **IT** media;
- Possess necessary **interpersonal skills** to be valued individual and team contributors. Realize and demonstrate effective **leadership responsibility**. Understand and commit professionally, **ethically and with human responsibility**, in line with the agriculturist's code of conduct;
- Work **independently** and take responsibility for personal actions. Recognize the need for and to engage in **life-long learning and professional development**;
- Enhance awareness and **commitment** towards effective citizenship and social **responsibility**.

## Generic Skills

It is required to keep in mind that education is all about to gain **a set of skills**. Such skills will make the graduates competent to face the reality of life, to develop the attitude of lifelong learning and to contribute to the socioeconomic development of the country

The curriculum of Agribusiness faculty will provide the following generic skills of the graduates:

Generic skills	Skill development mechanism
i. Intellectual skills matching with program of study	Collect up to date literature, participate actively in seminar, discussion, group work
ii. Practical & problem solving skills	Handling lab equipment, demonstrate practical skills, field problem identification and solution

iii. Numeracy and analytical skills	Group work, event management, case studies
iv. Entrepreneurship and innovation skills	Assignment, industry visit, Participate entrepreneurship development workshops
V. Communication &IT skills	Assignment, literature search, presentation
vi. Interpersonal, teamwork & leadership skill	Group work, attachment with students' organizations
vii. Self-management and personal development skills	Class attendance, punctuality, cooperativeness, sincerity, conduct, time management
viii. Commitment to community, country & humanity	Involvement with extra-curricular and social activities

### Curriculum Alignment/ Skill Mapping

Curriculum must be aligned with program objectives, program learning outcome and intended learning outcomes through proper skill mapping

### Format for skill mapping

Courses	Program Learning Outcome								
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
AGEC 127	x	x	x	x		x		x	
AGEC 177	x	x	x	x		x		x	
AGEC 229	x	x	x	x		x		x	
AGEC 231	x	x	x	x					
AGEC 279	x	x	x	x	x	x			
AGEC 281	x	x	x	x		x			
AGEC 333	x	x			x	x	X	x	x
AGEC 335	x	x			x	x	X	x	x
AGEC 383	x	x			x	x	X	x	x
AGEC 385 & 386	x	x		x				x	
AGEC 437 & 438	x	x	x	x	x			x	
AGEC 439	x	x	x	x		x		x	x
AGEC 487 & 488	x	x	x	x		x			x

Courses	Program Learning Outcome								
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
AGEC 489	X	X	X	X		X		X	
AGBM 125	X	X	X	X		X		X	
AGBM 175	X	X	X	X		X		X	
AGBM 225	X	X	X	X		X		X	
AGBM 275	X	X	X	X		X		X	
AGBM 325	X	X	X	X		X			
AGBM 327	X	X		X		X			
AGBM 329	X	X		X		X			
AGBM 375 & 376	X	X		X	X	X			
AGBM 425	X	X	X	X		X		X	
AGBM 475	X	X	X	X	X	X		X	
AGST 175 & 176	X	X	X	X	X	X		X	X
AGST 225 & 226	X	X	X	X		X		X	
AGST 275 & 276	X	X	X	X		X		X	
AGST 425 & 426	X	X	X	X		X		X	
AGST 475 & 476	X	X	X	X		X			
DEPS 125	X	X	X	X	X	X		X	
DEPS 275	X	X	X	X	X	X		X	
DEPS 325	X	X	X	X	X	X		X	
DEPS 377	X	X	X	X	X	X		X	
DEPS 479	X	X	X	X	X	X		X	
MAFI 175	X					X		X	
MAFI 177	X	X	X	X		X		X	
MAFI 225	X	X	X	X		X		X	
MAFI 227	X	X	X	X		X		X	
MAFI 329	X	X	X	X		X		X	
MAFI 379	X	X	X	X		X			

Courses	Program Learning Outcome								
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
MAFI 381	x	x	x	x		x			
MAFI 431 & 432	x	x	x	x		x			
MAFI 483	x	x	x	x		x			
ABOT 225	x	x	x	x		x		x	
AGCH 425	x	x	x	x		x			
AEIS 475 & 476	x	x			x	x	x		x
AGRO 125 & 126	x	x	x	x		x			
AGEN 225 & 226	x	x		x		x			
AGEN 275 & 276	x	x		x		x			
ENTO 275 & 276	x	x			x	x			
GEPB 375	x	x	x	x		x		x	
HORT 175 & 176	x	x	x	x	x	x		x	
SOIL 425	x	x	x	x		x		x	
PLPA 325 & 326	x	x	x	x		x		x	
ENGL 125 & 126	x				x	x	x	x	
FISH 125 & 126	x	x	x	x		x		x	
APMA 125 & 126	x	x	x	x		x		x	
POSC 175 & 176	x	x	x	x		x		x	

## Curriculum Structure and related information

### Nomenclature of Degree

The courses offered should lead to awarding the degree of Bachelor of Science in Agricultural Economics (Honors) in abbreviated form B. Sc. Ag. Econ. (Hons.).

### System of Education: Semester

### Eligibility for Admission

The candidates should have passes HSC/equivalent from Science Group. S/he should have GPA 7.5 combined from SSC/equivalent and HSC/equivalent without 4<sup>th</sup> subject; and at least GPA 3.0 separately. S/he shall have Physics, Chemistry,



Mathematics and Biology in both SSC/equivalent and HSC/equivalent examinations. These criteria can be changed by central admission committee by considering the situation.

### **Duration of Degree Program**

Each of the degree is a four-year Program divided into 8 academic semesters.

### **Academic Semester**

There will be two regular semesters (Semester I and Semester II) in an academic year. The duration of regular semester I & II will be of 22 weeks each. The semester I will start in January and semester II in July of each academic year.

The duration of each semester will be as follows:

Classes	16 weeks
Recess before Semester Final Examination	02 weeks
Semester Final Examination (Theory and Practical (approx.))	02 weeks
Result preparation and publication	02 weeks
<b>Total</b>	<b>22 weeks</b>

### **Medium of Instruction**

The medium of instruction is English

### **Academic Credit**

When a student enrolls in Sher-e-Bangla Agricultural University, he/she shall earn academic credits. In case of theoretical course, one lecture per week per semester (16 weeks) will be equivalent to one credit i.e. for a 3-credit course; there will be three lectures per week. In case of practical course one practical class of three per week will be equivalent to two credits.

### **Course Conduct**

The faculty offers two different programs, BBA in Agribusiness, major in Management/Finance/Marketing and BSc in Agricultural Economics (Hon's). If common courses are offered, course teacher will be responsible to conduct two separate class times of specific programs as per schedule. Common courses of two separate programs cannot be merged. For instance, if a department has a common course for both of the program, i.e *Fisheries Resource Management* by Department of Fisheries, course teacher must have to conduct two separate class times. Otherwise, it will be treated as violation of academic rules of Faculty of Agribusiness Management in Sher-e-Bangla Agricultural University.

## Types of Courses

The courses included in undergraduate curricula are divided into the following groups:

a) **Core/Compulsory courses:** In each semester specific number of courses will be offered as courses which are considered as compulsory courses.

b) **Elective Courses:** there will be a number of courses which will be offered as elective courses. Students have to complete four elective courses out of a number of elective courses according to their choice. The chosen elective courses will be treated as compulsory courses.

c) **Department Wise Compulsory and Elective Courses**

### Total Credit: 173

Departments	Compulsory Courses Credit Hour (Theory + Practical=Total)
Agricultural Economics	40 + 03 = 43
Agribusiness & Marketing	30 + 01 = 31
Agricultural Statistics	13 + 05 = 18
Development & Poverty Studies	12 + 00 = 12
Management & Finance	26 + 01 = 27
Agricultural Botany	02 + 00 = 02
Agricultural Chemistry	02 + 00 = 02
Agricultural Extension and Information System	03 + 01 = 04
Agronomy	03 + 01 = 04
Entomology	02 + 01 = 03
Fisheries Biology and Genetics	02 + 01 = 03
Agricultural Engineering	04 + 02 = 06
Genetics and Plant Breeding	02 + 00 = 02
Horticulture	03 + 01 = 04
Language	02 + 01 = 03
Plant Pathology	02 + 01 = 03

Soil Science	02 + 00 = 02
Animal Production & Management	02 + 01 = 03
Poultry Science	02 + 01 = 03
Total= 173 credit hour	<b>173</b>

### **Limits on the Credit Hours to be taken**

A student must get enrolled in the core courses designed in each semester. The student may be allowed to enroll up to maximum two elective courses in a single semester. The credit earned in the elective will be added in GPA calculation.

### **Grading System**

<b>Numerical Grade</b>	<b>Latter Grade</b>	<b>Grade Point</b>
80% or above	A+ (A plus)	4.00
75% to Less than 80%	A (A regular)	3.75
70% to Less than 75%	A- (A minus)	3.50
65% to Less than 70%	B+ (B plus)	3.25
60% to Less than 65%	B (B regular)	3.00
55% to Less than 60%	B- (B minus)	2.75
50% to Less than 55%	C+ (C plus)	2.50
45% to Less than 50%	C (C regular)	2.25
40% to Less than 45%	D (D regular)	2.00
Less than 40%	F (Failed)	0.00

### **Distribution of Marks**

#### **Theory**

Fifty percent (50%) of marks of a theoretical course shall be allotted for continuous assessment i.e. class participant/attendance, quizzes/assignment and class tests. The remaining (50%) of the marks will be allotted to Semester Final Examination. The distribution of theory marks for a given course will be as follows:

Class participation/attendance	10%
Quizzes/Assignment	10%
1st class test	15%
2nd class test	15%
Semester Final (20% quizzes + 30% descriptive)	50%
<b>Total</b>	<b>100%</b>

### Practical

- Forty five (45%) of marks will be allotted for first practical examination and
- Forty five percent (45%) of marks will be allotted for final practical examination and
- Ten percent (10%) of marks will be counted at the end of the semester for class attendance.

For practical final examination the internal and external examiners will conduct the examinations. The controller of examination will appoint the external examiners proposed by the Academic Committee of the Department concerned. The practical examinations must include experiments and/or problems, evaluation of practical note book, viva voce and class attendance etc.

Marks for class participation/attendance will be awarded as follows:

<b>Attendance</b>	<b>Marks</b>
90% and above	10
85% to less than 90%	9
80% to less than 85%	8
75% to less than 80%	7
70% to less than 75%	6
Less than 70%	0

Students having less than 70% of class attendance in any course shall not be allowed to appear in Semester Final Examination and he/she will have to repeat the course of that semester in the next available semester with fresh enrollment. The course

teacher(s) will send the attendance report for both theoretical and practical courses to the Dean through respective Chairman before filling up the form of Final Examination by the student.

### **Course Layout and Credit Hours for B.Sc.Ag. Econ (Hons.) Degree under the Semester System**

#### **LEVEL-1: SEMESTER-I**

Sl.	Course Title	Course Code		Credit Hour		
		Theory	Practical	Theory	Practical	Total
1.	Basic English	ENGL 125	ENGL 126	2	1	3
2.	Introduction to Agribusiness	AGBM 125	-	3	0	3
3.	Sociology	DEPS 125	-	3	0	3
4.	Elements of Fisheries	FISH 125	FISH 126	2	1	3
5.	Principles of Field Crop Management	AGRO 125	AGRO126	3	1	4
6.	Principles of Economics	AGEC 127	-	3	0	3
7.	General Animal Science	APMA 125	APMA 126	2	1	3
<b>Total</b>				<b>18</b>	<b>4</b>	<b>22</b>

#### **LEVEL-1: SEMESTER-II**

Sl.	Course Title	Course Code		Credit Hour		
		Theory	Practical	Theory	Practical	Total
1.	Business Communication	AGBM 175	-	2	0	2
2.	Principles of Management	MAFI 175	-	3	0	3
3.	Descriptive Statistics	AGST 175	AGST 176	3	1	4
4.	Financial and Managerial Accounting	MAFI 177	-	3	0	3
5.	Micro Economics-I	AGEC 177	-	3	0	3
6.	Principles of Horticultural Crop Management	HORT 175	HORT 176	3	1	4

7.	Poultry Science	POSC 175	POSC 176	2	1	3
<b>Total</b>				<b>19</b>	<b>3</b>	<b>22</b>

### LEVEL-2: SEMESTER-I

Sl.	Course Title	Course Code		Credit Hour		
		Theory	Practical	Theory	Practical	Total
1.	Organizational Behavior	MAFI 227	-	2	0	2
2.	Principles of Marketing	AGBM 225	-	3	0	3
3.	Financial Management	MAFI 225	-	3	0	3
4.	Inferential Statistics	AGST 225	AGST 226	3	1	4
5.	Economic Botany	ABOT 225	-	2	0	2
6.	Micro Economics-II	AGEC 229	-	3	0	3
7.	Economy of Bangladesh	AGEC 231	-	3	0	3
8.	Farm Mechanization	AGEN 225	AGEN 226	2	1	3
<b>Total</b>				<b>21</b>	<b>2</b>	<b>23</b>

### LEVEL-2: SEMESTER-II

Sl.	Course Title	Course Code		Credit Hour		
		Theory	Practical	Theory	Practical	Total
1.	Application of Statistical Packages in Social Sciences	AGST 275	AGST 276	2	1	3
2.	Macro Economics-I	AGEC 279	-	3	0	3
3.	Agricultural Marketing	AGBM 275	-	3	0	3
4.	Bangladesh Studies	DEPS 275	-	3	0	3
5.	Mathematical Economics	AGEC 281	-	2	0	2
6.	Food Technology	AGEN 275	AGEN 276	2	1	3
7.	Crop Protection-I	ENTO 275	ENTO 276	2	1	3

<b>Total</b>	<b>17</b>	<b>3</b>	<b>20</b>
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### LEVEL-3: SEMESTER-I

Sl.	Course Title	Course Code		Credit Hour		
		Theory	Practical	Theory	Practical	Total
1.	Business Ethics and Corporate Social Responsibilities	AGBM 325	-	3	0	3
2.	Supply Chain Management	AGBM 327	-	3	0	3
3.	E-Business	AGBM 329	-	2	0	2
4.	Macro Economics-II	AGEC 333	-	3	0	3
5.	Production Economics	AGEC 335	-	3	0	3
5.	Bank Management	MAFI 329	-	3	0	3
6.	Poverty Studies	DEPS 325	-	2	0	2
7.	Crop Protection-II	PLPA 325	PLPA 326	2	1	3
<b>Total</b>				<b>21</b>	<b>1</b>	<b>22</b>

### LEVEL-3: SEMESTER-II

Sl.	Course Title	Course Code		Credit Hour		
		Theory	Practical	Theory	Practical	Total
1.	Human Resource Management	MAFI 379	-	3	0	3
2.	State and Local Government	DEPS 377	-	2	0	2
3.	Small and Medium Enterprise Development	AGBM 375	AGBM 376	3	1	4
4.	Agricultural Finance	MAFI 381	-	3	0	3
5.	Environmental Economics	AGEC 383	-	2	0	2
6.	Agricultural Price Analysis	AGEC 385	AGEC 386	3	1	4
7.	Crop Plant Improvement	GEPB 375		2	0	2
<b>Total</b>				<b>18</b>	<b>2</b>	<b>20</b>

**LEVEL-4: SEMESTER-I**

Sl.	Course Title	Course Code		Credit Hour		
		Theory	Practical	Theory	Practical	Total
1.	International Business	AGBM 425	-	3	0	3
2.	Econometrics	AGEC 437	AGEC 438	3	1	4
3.	Agricultural Development Economics	AGEC 439	-	3	0	3
4.	Regression Analysis	AGST 425	AGST 426	3	1	4
5.	Management Information System	MAFI 431	MAFI 432	3	1	4
6.	Agro-Chemicals	AGCH 425	-	2	0	2
7.	Fertilizer Management	SOIL 425	-	2	0	2
<b>Total</b>				<b>19</b>	<b>3</b>	<b>22</b>

**LEVEL-4: SEMESTER-II**

Sl.	Course Title	Course Code		Credit Hour		
		Theory	Practical	Theory	Practical	Total
1.	Agricultural Risk Management	MAFI 483	-	3	-	3
2.	Agricultural Policy and Planning	AGEC 489	-	3	-	3
3.	Research Methodology	AGST 475	AGST 476	2	1	3
4.	Agricultural Extension and Information System	AEIS 475	AEIS 476	3	1	4
5.	Agribusiness Management	AGBM 475	-	3	-	3
6.	Development Studies	DEPS 479	-	2	-	2
7.	Farm Management	AGEC 487	AGEC 488	3	1	4
<b>Total</b>				<b>19</b>	<b>3</b>	<b>22</b>



Level	Credit Hours (Compulsory)		
	Theory	Practical	Total
Level-1 Semester-I	19	3	22
Level-1 Semester-II	19	3	22
Level-2 Semester-I	21	2	23
Level-2 Semester-II	17	3	20
Level-3 Semester-I	21	1	22
Level-3 Semester-II	18	2	20
Level-4 Semester-I	19	3	22
Level-4 Semester-II	19	3	22
<b>Total</b>	<b>153</b>	<b>20</b>	<b>173</b>

### Teaching-Learning Strategy

Curriculum consist teaching-learning strategies. The teaching methodologies employed will depend to a large degree on the preferred teaching style of the instructor and the size of the class. It is very helpful to incorporate a lot of questioning of the students into the lecture/discussion in order to keep the students engaged in the learning process.

- Class room instruction (participatory, critical thinking, decision making):
- Lab exercise (Lab and field related) and preparation of Practical Note Book
- Field work/visit and reporting
- Group work / assignment/Presentation/ Case Study
- Field problem identification and program planning
- Industry attachment
- Study tour/ Industrial Tour

### Study Tour / Industrial Tour

As a part of the academic curriculum students at different levels are required to perform study tour/industrial tour for enriching their practical knowledge. In addition, students have to perform Industrial visit, Farm & Home Visit, Agricultural Survey, Visit to Research Organizations, Extension Organizations and Non-Governmental Organizations (NGO) and a weeklong Extension Field Trip at Upazilla level as the practical assignments of the different Department of this university.

## **Assessment Strategy**

Assessment systems are duly communicated to students at the outset of the term/semester. Assessment procedures meet the objectives of the course. The assessment system is reviewed at regular intervals. Diverse methods are used for assessment.

**Both formative** and summative assessments such as

- Quizzes,
- Short answer
- Essay type
- Demonstration
- Assignments,
- Term papers,
- Continuous assessments,
- Case study
- Presentations etc.) and
- Summative assessment (final examination) strategies are followed.

The students are provided feedback immediately after assessment. Fairness and transparency is maintained in assessment system. Students are being informed in advance about methods of assessment in each course. In line with teaching learning student performance assessment approach must be focused on higher order learning. Exam-type questions and problems may be utilized to assess the relevant learning outcomes and skills. Open-ended questions, problems, and essay-type questions may be utilized to assess the higher levels of learning.

## Department of Agricultural Economics

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	AGEC 127: Principles of Economics (Theory)	3	1	I
2.	AGEC 177: Microeconomics-I (Theory)	3	1	II
3.	AGEC 229: Microeconomics-II (Theory)	3	2	I
4.	AGEC 231: Economy of Bangladesh (Theory)	3	2	I
5.	AGEC 279: Macroeconomics-I (Theory)	3	2	II
6.	AGEC 281: Mathematical Economics (Theory)	2	2	II
7.	AGEC 333: Macroeconomics-II (Theory)	3	3	I
8.	AGEC 335: Production Economics (Theory)	3	3	I
9.	AGEC 383 : Environmental Economics (Theory)	2	3	II
10.	AGEC 385: Agricultural Price Analysis (Theory)	3	3	II
11.	AGEC 386: Agricultural Price Analysis (Practical)	1	3	II
12.	AGEC 437: Econometrics (Theory)	3	4	I
13.	AGEC 438: Econometrics (Practical)	1	4	I
14.	AGEC 439: Agricultural Development Economics (Theory)	3	4	I
15.	AGEC 487: Farm Management (Theory)	3	4	II
16.	AGEC 488: Farm Management (Practical)	1	4	II
17.	AGEC 489: Agricultural Policy and Planning (Theory)	3	4	II
	Theory	40		
	Practical	3		
	<b>Total</b>	<b>43</b>		

<b>Course Code: AGEC 127</b> <b>Course Title: Principles of Economics (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 1</b>	<b>Semester: I</b>
<b>Rationale:</b> The course is an integrated introduction to the analysis of individual firms and market, as well as aggregate economic variables.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Introduce definitions of related economics’ concepts.</li> <li>• Develop understanding about optimal utilization of scarce resources and profit maximization.</li> <li>• Improve students’ understanding regarding market and market behavior.</li> <li>• Describe macroeconomic variables and their implications in economy.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The students will be able to-			
<ul style="list-style-type: none"> <li>• Recall the definition and scope of economics</li> <li>• Explain the relation of economics to other social sciences</li> <li>• Describe economic theory and economic system</li> <li>• Express understanding about the basic concepts of economics</li> </ul>	<b>Introduction:</b> Definition of economics, relation of economics to other social sciences, scope of economics, meaning of economic theory, economic system, some basic concepts- product, commodity, want, utility, choice and preference, consumption and factors of production, and budget.	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain the law of diminishing marginal utility and the law of equi-marginal utility</li> <li>• Describe practical applications of laws of utility</li> </ul>	<b>Utility Analysis:</b> Utility functions and laws of utilities.	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Define demand</li> <li>• Illustrate law of demand and demand function</li> <li>• Estimate price elasticity cross elasticity and income elasticity of demand.</li> </ul>	<b>Demand:</b> Various concepts of demand, law of demand, demand functions, shifts in demand, elasticity of demand and its measurements.	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer

<ul style="list-style-type: none"> <li>• Illustrate concepts, assumptions and properties of indifference curve technique</li> <li>• Measure the effect of price change on demand</li> <li>• Determine consumer's equilibrium</li> </ul>	<p><b>Indifference Curve Analysis:</b> Indifference curves and maps, characteristics of indifference curves, measuring the effects of price change on demand, and consumer's equilibrium.</p>	<p>Lecture Visual Presentation</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Define supply</li> <li>• Explain the law of supply and supply function</li> <li>• Estimate elasticity of supply.</li> <li>• Asses the market equilibrium through analyzing market demand and market supply functions.</li> </ul>	<p><b>Supply:</b> Law of supply and supply function, Determinants of supply, Shifts in supply, Elasticity of supply and Market equilibrium.</p>	<p>Lecture Visual Presentation Interactive discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Describe production function, laws of return, factors of productions and their application</li> </ul>	<p><b>Production:</b> Production functions, Total, average and marginal products, Law of diminishing marginal products, Iso-product curve, Marginal product of technical substitution (MRTS), Optimal combination of inputs, Returns to scale</p>	<p>Lecture Visual Presentation Interactive discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Describe short-run costs, Long-run costs, Economies and diseconomies of scale</li> <li>• Estimate short-run and long-run costs and cost functions</li> </ul>	<p><b>Cost:</b> Concepts of cost, Short-run costs, Long-run costs, and cost function and estimation of cost function.</p>	<p>Lecture Visual Presentation Interactive discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Assess the output level for profit maximization under different market structure through cost and revenue analysis</li> </ul>	<p><b>Markets and Revenue:</b> Meaning of market, Different forms of market, Concepts of total, average and marginal revenue, Relation between average revenue and marginal revenue curves, Relation</p>	<p>Lecture Visual Presentation Interactive discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>

	between different revenues and elasticity of demand, mechanism of price determination, Price and output determination under perfect competition and imperfect competition price discrimination, firm shutdown decision		
<ul style="list-style-type: none"> <li>Describe the concept of money, its evolution and functions, different theories of money, and the concept, causes and consequences of inflation</li> <li>Discuss different financial institutions through their functions</li> </ul>	<b>Money and Banking:</b> Definition and function of money, value of money and theory of money, inflation, and Functions of central, commercial and specialized banks.	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>Explain the concepts of national income, different techniques of its computation with constraints of each technique</li> <li>Describe importance of national income measurement</li> </ul>	<b>National Income:</b> Concepts and measurement of national income. Importance of national income measurement	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>Explain the concepts of public revenue, public finance and budget, sources of revenue, and objectives of taxation system</li> <li>Explain the characteristics and importance of a good tax system in developing economies.</li> <li>Describe the roles and effects of public expenditure in a developing economy</li> <li>Elucidate the canon of taxation</li> <li>Explain the contribution of taxation</li> </ul>	<b>Public Finance:</b> Public expenditure, effects and role of public expenditure, sources of revenue and taxation. canon and contribution of taxation	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>Identify underdeveloped countries</li> <li>Explain the problems of underdeveloped countries</li> </ul>	<b>Underdeveloped Countries:</b> Characteristics and problem	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer

**Reference Books**

1. Ahuza, H.L. (2004). Modern Microeconomics- Theory and Applications, S. Chand and Company (Pvt.) Ltd., New Delhi, India.
2. Dilts, D.A. (2004). Introduction to Microeconomics, 6<sup>th</sup> edition, Indiana, Purdue University, Fort Wayne, USA.
3. Dewett, K.K. and Navalur, M.H. (2006). Modern Economic Theory, S. Chand and Company (Pvt.) Ltd., New Delhi, India.
4. McCronnell, C., Brue, S. and Flynn, S. (2008). Microeconomics: Principles and Policies, McGraw Hill, Columbus, USA.

<b>Course Code: AGECE 177</b> <b>Course Title: Microeconomics-I (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 1</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is designed to develop the student's knowledge and skill in the systematic analysis of principles of micro economics.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Introduce students with the basics of microeconomic concepts.</li> <li>• Improve students' understanding regarding consumer behavior</li> <li>• Flourish students' understanding about laws of returns and returns to scale</li> <li>• Explain the theories of wage, rent, interest and profit</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The students will be able to-			
<ul style="list-style-type: none"> <li>• Describe the definition, importance and uses of microeconomics as well as their practical implications</li> </ul>	<b>Basic Concept:</b> Basic concepts of microeconomics, its importance, uses and applications.	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain utility and explain Marshallian cardinal utility analysis and its critical evaluation.</li> </ul>	<b>Theory Of Consumer Behavior:</b> Utility and marginal utility analysis, Principle of equi-marginal utility, its importance and critical evaluation.	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain demand and derive demand curve with the help of law of diminishing marginal utility and law of equi marginal utility.</li> </ul>	<b>Demand:</b> Demand and law of demand, derivation of demand curve.	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Define elasticity of demand and assess elasticity of demand and consumer's equilibrium as well as interpret the result</li> </ul>	<b>Elasticity of Demand:</b> Definition, various concepts of demand elasticity, measurement of elasticity and application of demand elasticity	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Narrate the concepts of indifference curve and indifference map.</li> <li>• Illustrate indifference curves of goods and services.</li> </ul>	<b>Indifference Curve Analysis:</b> Indifference curves and ordinal preference, corner solution, point of bliss, properties of indifference	Lecture Visual Presentation Interactive discussion Assignment	Quiz/MCQ Short answer Essay type answer Report



<ul style="list-style-type: none"> <li>• Explain the concepts of Marginal rate of substitution, budget line and shift in the budget line.</li> <li>• Illustrate consumers' equilibrium: maximizing satisfaction for first and second order condition.</li> <li>• Explain income, substitution and price effects.</li> <li>• Explain revealed preference theory</li> <li>• Describe the effect of change in price on demand</li> <li>• Illustrate recent development in demand theory</li> <li>• Estimate and analyze elasticity of demand</li> </ul>	<p>curves, budget line, consumer's equilibrium, income, substitution and price effects.</p> <p>Revealed preference theory, recent development in demand theory. estimation and application of demand elasticity</p>		
<ul style="list-style-type: none"> <li>• Describe factors of production and able to explain the classification of factors of production.</li> <li>• Explain production function, law of variable proportions and the three stages of the law of variable proportions.</li> <li>• Illustrate isoquants, Marginal rate of technical substitution and returns to scale.</li> <li>• Explain optimum factor combination, Economic region of production, iso-cost line and expansion path.</li> <li>• Describe concepts of cost and cost curves, types of external economics and learning curve.</li> </ul>	<p><b>Theory of Production:</b></p> <p>Factors of production production with one variable input, production with two variable inputs, optimum combination of two products, cost of production and cost curve.</p>	<p>Lecture Visual Presentation Interactive discussion Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Describe the theory of wages, supply curve of labor, wage determination under perfect</li> </ul>	<p><b>The Theory of Distribution:</b> Wages, rent, interest and profits.</p>	<p>Lecture Visual Presentation</p>	<p>Quiz/MCQ Short answer Essay type</p>

<p>competition in the labor market and exploitation of labor.</p> <ul style="list-style-type: none"> <li>• Explain theories of rent and their critical evaluation, relationship between rent and population, scarcity rent, differential rent and quasi rent.</li> <li>• Illustrate the concepts of interest and describe the theories of interest.</li> <li>• Narrate the concepts, elements of profits and describe the theories of profit.</li> <li>• Explain the theory of income distribution and its critical evaluation and concepts of productivity.</li> </ul>	<p>marginal productivity theory of distribution, demand for a productive service, supply of a productive service, distribution and relative factor shares</p>	<p>Interactive discussion Assignment</p>	<p>answer Report</p>
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**Reference Books**

1. Ahuza, H.L. (2004). Modern Microeconomics- Theory and Applications, S. Chand and Company (Pvt.) Ltd., New Delhi, India.
2. Bilas, R.A. (1981), Microeconomic Theory, McGraw Hill, London, UK.
3. Dewett, K.K. and Chand, A. (2000), Modern Economic Theory, S. Chand & Co., New Delhi, India.
4. Dilts, D.A. (2004). Introduction to Microeconomics, 6<sup>th</sup> edition, Indiana, Purdue University, Fort Wayne, USA.
5. Glass, J.C. (1980), An Introduction to Mathematical Methods in Economics, McGraw Hill, London, UK.
6. Henderson, J.M. and Quandt, R.E. (1985), Microeconomic Theory - A Mathematical Approach, 3rd edn., McGraw Hill, London, UK.
7. Hirshleifer, J. (1976). Price Theory and Applications, Prentice Hall International Inc. London, UK.
8. Varian, H. R. (2010). Intermediate microeconomics: A modern approach. New York: W.W. Norton & Co.

<b>Course Code: AGEC 229</b> <b>Course Title: Microeconomics-II (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 2</b>	<b>Semester: I</b>
<b>Rationale:</b> The course is arranged to provide the theories of firm equilibrium, product pricing and welfare economics.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire knowledge about equilibrium of the firm under different market competitions.</li> <li>• Improve students' understanding regarding the different market structure</li> <li>• Determine price under different market structure.</li> <li>• Enrich students understanding on welfare economics and its application in the real world situations.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The students will be able to-			
<ul style="list-style-type: none"> <li>• Define equilibrium of the firm and enlist objectives of the firm</li> <li>• Explain profit maximization, Security motive, sales maximization, utility maximization, staff maximization, growth maximization</li> <li>• Illustrate equilibrium of the firm by using total revenue and total cost approach</li> <li>• Illustrate equilibrium of the firm by using marginal revenue and marginal cost approach</li> <li>• Define different types of market and compare among the categories of market.</li> <li>• Classify market on the basis of elasticity of demand</li> <li>• Identify the concepts of total revenue, average revenue and marginal revenue</li> </ul>	<b>The Theory of Firm:</b> Equilibrium of the firm, classification of market structure, cost and revenue concepts, profit maximization and other objectives of the firm.	Lecture Visual Presentation Interactive discussion Assignment Group work Case study Feedback	Quiz/MCQ Short answer Essay type answer Presentation performances Report
<ul style="list-style-type: none"> <li>• Generalize equilibrium of the firm under perfect competition, monopolistic competition, oligopoly competition and monopoly</li> <li>• Explain long-run (identical cost, differential cost conditions) and</li> </ul>	<b>The Theory of Product Pricing:</b> Supply curve and equilibrium of the industry under perfect competition, price determination under perfect	Lecture Visual Presentation Interactive discussion Assignment Group work	Quiz/MCQ Short answer Essay type answer Presentation performances

<p>short-run equilibrium of a firm under perfect competition</p> <ul style="list-style-type: none"> <li>• Illustrate long-run and short-run supply curve of the competitive industry</li> <li>• Determine price through demand and supply curve under perfect competition</li> <li>• Interpret impact of changes in demand under market equilibrium</li> <li>• Recall the definition of price discrimination and degrees of price discrimination</li> <li>• Appraise equilibrium under price discrimination, dumping case and social justification of price discrimination</li> <li>• Evaluate price-output equilibrium under monopolistic competition, oligopoly and monopoly</li> </ul>	<p>competition. Price and output under monopoly, Price discrimination, Price and output determination under monopolistic competition and oligopoly, Price determination under perfect competition, price discrimination</p>	<p>Case study Feedback</p>	
<ul style="list-style-type: none"> <li>• Define welfare economics</li> <li>• List the basic concept of social welfare</li> <li>• Classify the basic concepts of welfare economics</li> <li>• Apply the role of value judgments in welfare economics</li> <li>• Construct edgeworth box and interpret pareto optimality and economic efficiency</li> <li>• Explain compensation principle</li> <li>• Recall the definition of social welfare function</li> <li>• Illustrate grand utility possibility frontier and position of constrained bliss</li> <li>• Evaluate Bergson-Samuelson social welfare function</li> </ul>	<p><b>Welfare Economics:</b> Introduction, Neo-classical welfare economics and consumer's surplus, conditions of pareto optimality, pareto optimality and economic efficiency, compensation principle, social welfare maximization, grand utility possibility frontier, Social welfare function.</p>	<p>Lecture Visual Presentation Interactive discussion Assignment Group work Case study Feedback</p>	<p>Quiz/MCQ Short answer Essay type answer Report Presentation performances</p>

### **Reference Books**

1. Ahuza, H.L. (2004). Modern Microeconomics- Theory and Applications, S. Chand and Company (Pvt.) Ltd., New Delhi, India.
2. Baumol, W.J. (1972), Economic Theory and Operations Analysis, 3rd Edition, Prentice/Hall International Inc. London.
3. Chamberlin, E.H. (1950), The Theory of Monopolistic Competition, Harward University Press, Cambridge (6th edn.).
4. Dev, G.J. (1957), Theoretical Welfare Economics, Cambridge University Press, London. Dewett, K.K. and Chand, A. (2000), Modern Economic Theory, S. Chand & Co., New Delhi, India.
5. Dilts, D.A. (2004). Introduction to Microeconomics, 6th edition, Indiana, Purdue University, Fort Wayne, USA.
6. Dinwiddy, C. (1967), Elementary Mathematics for Economists, Oxford University Press, Dhaka.
7. Fellner, W. (1949), Competition Among the Few:Oligopoly and Similar Market Structure, Alfred A. Knopt, New York.
8. Robinson, J. (1933), The Economics of Imperfect Competition, Macmillan & Co. Ltd., London.
9. Stigler, G. J. (1952), The Theory of Price, Mcmillan & Co., New York.

<b>Course Code: AGECE 231</b> <b>Course Title: Economy of Bangladesh (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 2</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide basic knowledge about the economic profile of Bangladesh.			
<b>Course Learning Outcomes:</b> The prime objectives of this course are to- <ul style="list-style-type: none"> <li>• Gain knowledge about the natural resources of Bangladesh.</li> <li>• Acquire knowledge about different aspects of population</li> <li>• Describe the land tenure system in Bangladesh.</li> <li>• Show the production status of food and cash crops</li> <li>• Represent problems and prospects of industrialization in Bangladesh.</li> <li>• Explain different aspects of transport and communication</li> <li>• Illustrate banking, credit, foreign trade and budgeting</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define natural resources</li> <li>• Identify different types of natural resources</li> </ul>	<b>Natural Resources of Bangladesh:</b> Soil, water, river, forest, fisheries, livestock, minerals, oil and gas.	Lecture Visual presentation, Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the population policy of Bangladesh</li> <li>• Identify and analyze the factors of population growth</li> <li>• Discuss about labour force and its distribution</li> <li>• Explain the role of women in economic development</li> </ul>	<b>Population:</b> Population policy of Bangladesh, Population growth and its structure, Labour force and its distribution, role of women in economic development.	Lecture Visual presentation, Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Define land reform</li> <li>• Explain different aspects of land reform</li> <li>• Describe the history of land reform in Bangladesh</li> <li>• Elucidate about land policy</li> <li>• Identify and explain the factors of mechanization of agriculture</li> </ul>	<b>Land Tenure Systems:</b> Land reforms and its aspects. history of land reform in Bangladesh, land policy, mechanization of agriculture.	Lecture Visual presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Illustrate the factors and status of food and cash</li> </ul>	<b>Agricultural Production:</b> Production of food and cash	Lecture Visual	Quiz/MCQ Short answer

<p>crop production in Bangladesh</p> <ul style="list-style-type: none"> <li>• Explain the status and race between population growth and food and nutritional security.</li> </ul>	<p>crops, population growth and food supply and nutritional status.</p>	<p>presentation Interactive discussion</p>	<p>Essay type answer</p>
<ul style="list-style-type: none"> <li>• Explain the problems of industrialization in Bangladesh</li> <li>• Describe the factors affecting entrepreneurship development</li> <li>• Identify and analyze different aspects of nationalization, denationalization and privatization in Bangladesh</li> </ul>	<p><b>Industrialization:</b> Problems of industrialization in Bangladesh, entrepreneurship development. experiences with nationalization, denationalization and privatization in Bangladesh</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Explain the Different aspects of transport and communication system</li> </ul>	<p><b>Transport and Communication:</b> Different aspects of transport and communication system</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Explain the functioning of banking sector</li> <li>• Explain the credit policy of different banks</li> <li>• Describe the foreign trade condition of Bangladesh</li> <li>• Define and identify different types of budget</li> <li>• Explain the process of budgeting and planning</li> </ul>	<p><b>Financial sector:</b> Banking, credit, foreign trade. budget and planning.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>

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3. Dyks, S.F. (1991). Agriculture and the Environment, U.S. Department of Agriculture, 10, Dilkusha Commercial Area, Bangladesh.
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5. Rahman, M. (1986). Tradition; Development and Individual, Asian Population Change Series No. 1., Australian National University, Canberra, Australia.
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7. Wong, J. (1979). Group Farming in Asia, University Press Pvt. Ltd., University of Singapore, Kent Ridge, Singapore.



<b>Course Code: AGECE 279</b> <b>Course Title:</b> <b>Macroeconomics-I (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 2</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is designed to provide the fundamental concepts of macroeconomics, macroeconomic accounting and macroeconomic theories of income, output and employment.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Introduce fundamental macroeconomic concepts.</li> <li>• Measure national income accounts by different methods</li> <li>• Evaluate economic as well as social welfare with contrast to national income accounts.</li> <li>• Determine aggregate income, output and employment.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The students will be able to-			
<ul style="list-style-type: none"> <li>• Recall meaning, development, practical and theoretical importance, and limitations of macroeconomics</li> <li>• Define macroeconomic variables and related basic concepts</li> </ul>	<b>Introduction:</b> The meaning of macroeconomics, difference between microeconomics and macroeconomics, macroeconomic variables and related basic concepts.	Lecture Visual presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the concepts of national income, different techniques of its computation with constraints of each technique</li> <li>• Measure GDP by value-added and market value methods</li> <li>• Illustrate the importance of national income estimates</li> <li>• Evaluate national income and economic welfare as well as social welfare.</li> </ul>	<b>Measurement of Economic Activity:</b> Income, expenditure and circular flow, national income, the gross national product account, rules of computing GDP, real Vs nominal GDP, GDP deflator, conceptual problems in the estimation of national income, national income and social welfare.	Lecture Visual presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Define Aggregate demand, aggregate supply, and Aggregate production</li> <li>• Describe the demand for and supply of labor.</li> <li>• Estimate equilibrium level of employment with real wage.</li> </ul>	<b>Output and Employment:</b> Aggregate demand and supply, aggregate production function, demand for and supply of labor, changes in money wages and real wages, and employment.	Lecture Visual presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer

<ul style="list-style-type: none"> <li>Describe classical theory of output and employment with change in demand for labor, change in supply of labor, change in money supply and with rigid money wage</li> <li>Determine aggregate income and output</li> <li>Compute the effect of investment multiplier, fiscal multiplier and foreign trade multiplier on output</li> </ul>	<p><b>Classical Macroeconomics:</b> Consumption and saving functions, determinants of consumption, classical theory of output and employment, equilibrium income and output in two sector economy, multiplier and multiplier model, investment multiplier, fiscal multiplier and foreign trade multiplier.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>Determine aggregate income, output and employment by simple Keynesian model</li> <li>Describe criticism of Keynesian model</li> <li>Compare between Classical theory and Keynesian theory of income, output and employment</li> </ul>	<p><b>Keynesian Macroeconomics:</b> Income, output and employment determination by simple Keynesian model, criticism of Keynesian model, Classical theory Vs Keynesian theory.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>

**Reference Books**

- Dernburg, T.F. and Mcdougall, D.M. (1983): Macroeconomics, Asian Student Edition, Singapore National Printers (Pvt) Ltd.
- Dewett, K.K. (1998): Modern Economic Theory. S. Chand & Company Ltd. India.
- Dornbusch, R. and Fischer, S. (1985): Macroeconomics, International Student Edition, McGraw-Hill, Singapore.
- Poindexter, J.C. (1981): Macroeconomics, Holt-Saunders International, Second Edition, USA.
- Shapiro, E. (1984): Macroeconomics Analysis, Harcourt Brace Javanovich Inc.
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<b>Course Code: AGE 281</b> <b>Course Title: Mathematical Economics (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 2</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is designed to provide the mathematical tools for application in the field of economics.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Introduce definitions of related concepts of mathematics.</li> <li>• Apply principles of economics to solve real world problems.</li> <li>• Determine individual and market equilibrium, elasticity, optimal output level, consumer's and producer's surplus, rate of sales, require man-hour, and impact of government policy..</li> <li>• Apply matrix and linear programming to economic analysis.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The students will be able to-			
<ul style="list-style-type: none"> <li>• State the definitions of fundamental concepts of mathematical economics, numbers, equations, functions.</li> <li>• Apply linear and non-linear function to economic analysis</li> </ul>	<b>Introduction:</b> Basic concepts of mathematical economics, numbers, equations, functions, application of functions to economic analysis	Lecture Visual presentation Problem solving Interactive discussion	Quiz/MCQ Short answer Problem solving
<ul style="list-style-type: none"> <li>• Determine and evaluate individual and market equilibrium situations</li> </ul>	<b>Equilibrium:</b> Individual and market equilibrium analysis	Lecture Visual presentation Problem solving Interactive discussion	Quiz/MCQ Short answer Problem solving
<ul style="list-style-type: none"> <li>• Apply homogenous function to economic analysis.</li> <li>• Estimate elasticity of demand, supply and production.</li> <li>• Determine optimal output level.</li> <li>• Analyze learning curve</li> <li>• Determine rate of sales and annuity</li> </ul>	<b>Differentiation, Integration and Their Application in Economics:</b> Homogenous function, Euler's theorem, application of homogenous function, Euler's theorem in economics, concepts of elasticity, input-output analysis, unconstrained maximization and minimization,	Lecture Visual presentation Problem solving Interactive discussion	Quiz/MCQ Short answer Problem solving

	constrained maximization and minimization, learning curve, rate of sales and annuity		
<ul style="list-style-type: none"> <li>Apply matrix to economic analysis.</li> </ul>	<b>Determinants and Matrix In Economic Analysis:</b> Concepts and application of determinants and matrix in economics	Lecture Visual presentation Problem solving Interactive discussion	Quiz/MCQ Short answer Problem solving
<ul style="list-style-type: none"> <li>Apply linear programming method in decision making.</li> </ul>	<b>Linear Programming in Economic Decision Making</b>	Lecture Lecture Visual presentation Problem solving Interactive discussion	Quiz/MCQ Short answer Problem solving

### Reference Books

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2. Chiang, A.C. (1974). Fundamental Methods of Mathematical Economics, 2nd edn. McGraw-Hill, Tokyo (latest edition).
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4. Henderson, J.M. and Quandt, R.E. (1971). Microeconomic theory: A Mathematical Approach, 2nd edn. McGraw-Hill Book Company Inc. (latest edition).
5. Jacques, I. Mathematics for Economics and Business, 2nd edn. (1973), Cambridge University Press, Addison-Wesley Publishing Co.
6. James, D.E. and Throsby, C.D. (1973). Introduction to Quantitative Methods in Economics, John Wiley and Sons, Brisbane.
7. Lewis, J.P. (1962). An Introduction to Mathematics for Students of Economics, Macmillan and Co. Ltd., London.
8. Mabbett, A.J. (1986). Work-out Mathematics for Economists, Macmillan, London.
9. Yamane, T. (1968). Mathematics for Economists, 2nd edn., Englewood Cliffs: Prentice Hall, Inc.
10. Allen, R.G.D. (1930). Mathematical Analysis for Economist, London: The Macmillan Co.

<b>Course Code: AGECE 333</b> <b>Course Title:</b> <b>Macroeconomics-II (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 3</b>	<b>Semester: I</b>
<b>Rationale:</b> The course is designed to provide the macroeconomic theories of money, interest, price, policy, trade cycle and economic growth.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Describe the theories of investment, money and interest.</li> <li>• Explain the impact of changing monetary and fiscal policies on capital market.</li> <li>• Explain effects of and control measures to different types of inflation, and theories of trade cycle.</li> <li>• Determine sustainable inflationary expectation and cost of economic growth.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The students will be able to-			
<ul style="list-style-type: none"> <li>• Define investment and marginal efficiency of capital</li> <li>• Explain the factors affecting investment, marginal efficiency of capital and business expectations</li> <li>• Explain the role of business expectations</li> </ul>	<b>Investment Theory:</b> Meanings, types and importance of investment, determinants of investment, meanings and factors affecting marginal efficiency of capital, business expectations in determining of marginal efficiency of capital.	Lecture Visual presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the demand for and supply of money from the view point of classical, Keynesian and modern approaches.</li> </ul>	<b>Demand for and Supply of Money:</b> Classical approach, Keynesian approach, Modern approach	Lecture Visual presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Illustrate Classical theory, loanable fund theory, liquidity preference theory and modern theory of interest</li> </ul>	<b>Theories of Interest:</b> Classical theory, loanable fund theory, liquidity preference theory and modern theory	Lecture Visual presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• State cash-transaction approach and cash-balance approach of quantity theory of money and their criticisms</li> <li>• Explain the relationship between quantity theory of money and Say's law of markets</li> </ul>	<b>Quantity Theory of Money:</b> Cash-transaction approach, cash-balance approach, and quantity theory of money and Say's law of markets.	Lecture Visual presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer

<ul style="list-style-type: none"> <li>• Describe the meaning and related concepts of inflation</li> <li>• Explain different types of inflation</li> <li>• Describe the effects of and control measures to inflation</li> <li>• Determine sustainable inflationary expectation through short-run Phillips curve and long-run Phillips curve</li> </ul>	<p><b>Inflation:</b> Meaning of inflation and related concepts, categories and types of inflation, Phillips curve, effects of inflation and measures to control inflation.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Describe the tools of monetary policy and fiscal policy in income stabilization</li> <li>• Explain the concepts, phases, and theories of trade cycle</li> <li>• Illustrate the nature and sources, and cost of economic growth.</li> </ul>	<p><b>Macroeconomic Policy, Trade Cycle and Economic Growth:</b> Monetary policy, Fiscal policy, concepts and phases of trade cycle, theories of trade cycle, meaning and measurement of economic growth, nature and sources of economic growth, and cost of economic growth.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Define balance of payment, current and capital accounts</li> <li>• Explain equilibrium, disequilibrium and adjustments in balance of payments and balance of trade</li> <li>• Illustrate purchasing power parity theory, modern theory of exchange rate, and fluctuating and fixed exchange rate</li> </ul>	<p><b>Balance of Payments and Foreign Exchange Rate:</b> Meaning of balance of payment, current and capital accounts, Balance of payments and balance of trade-equilibrium, disequilibrium and adjustments, purchasing power parity theory and modern theory of exchange rate, fluctuating and fixed exchange rate</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>

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1. Shapiro, E. (1984): Macroeconomics Analysis, Harcourt race Javanovich Inc. 17
2. Branson, W.H. (1979): Macroeconomic Theory and Policy, 2nd Edition, Harper and Row Publishers, London.
3. Dernburg, T.F. and McDougall, D.M. (1983): Macroeconomics, Asian Student Edition, Singapore National Printers (Pte) Ltd.
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5. Poindexter, J.C. (1981): Macroeconomics, Holt-Saunders International, Second Edition, USA.
6. Vaish, M.C. (2001): Macroeconomic Theory. Vikas Publishing House Pvt. Ltd.

<b>Course Code: AGECE 335</b> <b>Course Title: Production Economics (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 3</b>	<b>Semester: I</b>
<b>Rationale:</b> The course is designed to provide knowledge on efficient allocation of resources under static and dynamic situations.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Perform graphical and mathematical analysis using production economic theory</li> <li>• Explain production economics theory and its applications</li> <li>• Expose students to the practical applications of production theory to agricultural problems, rural development and environment</li> <li>• Describe the challenges and opportunities of achieving agricultural productivity growth in Bangladesh</li> <li>• Apply production economics theory and methods in agricultural research and management</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define production, production economics and cost of production.</li> <li>• Explain three stages of production function.</li> <li>• Describe types of production function.</li> <li>• Identify the rational and irrational stages of production function.</li> <li>• Determine the optimum level of profit maximization.</li> <li>• Define allocative efficiency, technical efficiency</li> </ul>	<b>Introduction, Production and Cost Functions:</b> Concept of a production function. Types of production function, law of diminishing returns. costs of production. allocation of one variable input. economic efficiency and profit maximization for an enterprise.	Lecture Visual presentation Interactive discussion Mathematical application Assignment	Quiz / MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Describe the characteristics of Iso-cost line.</li> <li>• Illustrate the Marginal Rate of Technical Substitution.</li> <li>• Describe the types of factor substitution.</li> <li>• Determine the least cost combination of resources.</li> <li>• Graphically present the expansion path, Ridge line and Isocline.</li> </ul>	<b>Production with Two or More Variable Inputs:</b> Production function for two variable inputs, iso-cost lines, Least cost criterion. Isoclines, Expansion paths, and Profit maximization.	Lecture Visual presentation Interactive discussion Mathematical application Assignment	Quiz / MCQ Short answer Essay type answer Report Problem solving
<ul style="list-style-type: none"> <li>• Define Production possibility curve.</li> </ul>	<b>Production of Two or More Products:</b> Production	Lecture Visual	Quiz / MCQ

<ul style="list-style-type: none"> <li>• Explain the Production possibility curve.</li> <li>• Describe the relationship among the products.</li> <li>• Describe the types of product substitution.</li> <li>• Determine the optimum level of product combination.</li> </ul>	<p>possibility curve, relationships among products, maximum revenue combination of outputs.</p>	<p>presentation Interactive discussion Mathematical application Assignment</p>	<p>Short answer Essay type answer Report Problem solving</p>
<ul style="list-style-type: none"> <li>• Explain the long run cost curve.</li> <li>• Relate between long run and short run cost curve</li> <li>• Differentiate economics of size and economics of scale.</li> <li>• Determine the equilibrium in the long run.</li> </ul>	<p><b>Economics of Size and Their Implications for Farms:</b> Production in the long-run returns to scale, and equilibrium in the long-run.</p>	<p>Lecture Visual presentation Interactive discussion Mathematical application Case study Assignment</p>	<p>Quiz / MCQ Short answer Essay type answer Report Problem solving</p>
<ul style="list-style-type: none"> <li>• Explain the effect of time on production.</li> <li>• Determine the profit maximization for a variable length production period.</li> <li>• Determine the value of an agricultural land.</li> </ul>	<p><b>Production Process Through Time:</b> A general picture considering Bangladesh agriculture over a period of time, Economic aspects of durable inputs and valuing agricultural land. Land tenure system.</p>	<p>Lecture Visual presentation Interactive discussion Mathematical application Assignment</p>	<p>Quiz / MCQ Short answer Essay type answer Report Problem solving</p>
<ul style="list-style-type: none"> <li>• Discuss agricultural production in the subsistence agriculture vis-a-vis commercial agriculture.</li> <li>• Determine the Farmer Attitudes Toward Risk and Uncertainty</li> <li>• Illustrate Risk, Uncertainty and Marginal Analysis</li> <li>• Describe the Strategies for Dealing with Risk and Uncertainty.</li> </ul>	<p><b>Resource Use Efficiency:</b> Resource curves and efficiency in response. decision making for agricultural production in the subsistence agriculture vis-a-vis commercial agriculture. introduction to decision theory. historical reviews of agricultural production systems. analyzing risky production processes. transformation of traditional agriculture.</p>	<p>Lecture Visual presentation Interactive discussion Mathematical application Assignment</p>	<p>Quiz / MCQ Short answer Essay type answer Report Problem solving</p>
<ul style="list-style-type: none"> <li>• Elucidate the role of agriculture in economic development.</li> <li>• Discuss the impact of technology on the firm.</li> </ul>	<p><b>Farm Adjustments in a Changing Technology:</b> Technological change and competition among regions. Terms of trade and rate of</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz / MCQ Short answer Essay type</p>



<ul style="list-style-type: none"> <li>Describe the production in a competitive region.</li> <li>Determine the Long-Run Profit Maximization</li> </ul>	<p>protection in agriculture. attributes of farm adjustment in the context of agreement on agriculture under WTO rules.</p>	<p>Mathematical application Assignment</p>	<p>answer Report Problem solving</p>
<ul style="list-style-type: none"> <li>Represent the assumptions of Linear Programming.</li> <li>Maximize the production subject to constrain.</li> <li>Differentiate linear programming and non-linear programming.</li> <li>Explain the Lagrangean multiplier.</li> <li>Describe the Classical Optimization and Linear Programming.</li> <li>Solve Linear Programming Models.</li> </ul>	<p><b>Programming:</b> Linear programming and non-linear programming. Solution approach-graphical method and simplex method. Problems and exercises. investment decisions</p>	<p>Lecture Visual Presentation Interactive discussion</p>	<p>Quiz / MCQ Short answer Essay type answer Report Problem solving</p>
<ul style="list-style-type: none"> <li>Explain the latest research findings and information of production economics</li> </ul>	<p>Latest research findings, information, regarding production economics.</p>	<p>Assignment</p>	<p>Report</p>

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- Anderson, J.R., Dillon, J.L. and Hardaker, J.B. (1977), Agricultural Decision Analysis, Iowa State University Press, Ames.
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- Doll, J.P. and Orazem, F. (1984), Production Economics - Theory with Applications, 2nd edn., John Wiley, New York.
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<b>Course Code: AGECE 383</b> <b>Course Title: Environmental Economics (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 3</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is planned to gain the sagacity of environmental economics and its practical implications for optimum use of environmental and natural resources.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquaint with the basic concept of environmental economics</li> <li>• Amass the techniques of environmental valuation</li> <li>• Flourish students' understanding regarding the environmental risk analysis</li> <li>• Thrive the knowledge of global environmental issues</li> <li>• Attain perception on environmental justice and its application in the real world</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategy</b>
The students will be able to-			
<ul style="list-style-type: none"> <li>• Find the connection between environment and economic growth, economic development</li> <li>• Describe human-environment relationship and economic approach</li> <li>• Explain role of economics in environmental management</li> <li>• Discuss environmental problems and economic efficiency</li> <li>• Illustrates externalities as a source of market failure and environmental problems</li> <li>• Generalize the concepts of property regime for natural resource management</li> <li>• Explain efficient property right structures, legislative and executive regulation</li> </ul>	<b>Economics and Environment Linkage:</b> The Economy vs. the environment, The role of economics in environmental management, externalities and environmental problems, property rights, property rules and liability rules, different property rights regimes	Lecture Visual presentation Interactive discussion Assignment Group work Case study Role playing	Quiz/MCQ Short answer Essay type answer Presentation performances Report
<ul style="list-style-type: none"> <li>• Find out optimal outcome using static and dynamic efficiency concepts</li> <li>• Explain the concepts of economics pollution control</li> <li>• Recommend the issues involved in benefit estimation and asses the approaches to cost</li> </ul>	<b>Valuing the Environment :</b> The tools of environmental economics, Economics of pollution control, benefit-cost analysis and non-market valuation, conventional solutions to environmental	Lecture Visual presentation Interactive discussion Assignment Group work Case study	Quiz/MCQ Short answer Essay type answer Presentation performances Report

<p>estimation</p> <ul style="list-style-type: none"> <li>Describe cost effectiveness analysis and impact analysis</li> <li>Discuss command and control approach for solving economic problems</li> </ul>	<p>problems: The command and control approach, Economic solutions to environmental Problems</p>	<p>Role playing</p>	
<ul style="list-style-type: none"> <li>State the definition of use value, option value and nonuse value</li> <li>Classify valuation methods</li> <li>Apply the concepts of revealed preference methods and stated preference methods</li> <li>Use the geographic information system for environmental valuation</li> </ul>	<p><b>Environmental Valuation Methods:</b> Types of values, revealed preference methods, stated preference methods, GIS for economic valuation</p>	<p>Lecture Visual presentation Interactive discussion Assignment Group work Case study Role playing</p>	<p>Quiz/MCQ Short answer Essay type answer Presentation performances Report</p>
<ul style="list-style-type: none"> <li>Enlist the criteria for evaluating environmental policies</li> <li>Describe different instrument for evaluating environmental policies in the real world situation</li> </ul>	<p><b>Criteria for Evaluating Environmental Policies:</b> Efficiency, cost-effectiveness, fairness, enforceability, flexibility, incentives for technological innovations and moral considerations</p>	<p>Lecture Visual presentation Interactive discussion Assignment Group work Case study Role playing</p>	<p>Quiz/MCQ Short answer Essay type answer Presentation performances Report</p>
<ul style="list-style-type: none"> <li>Explain two period model of sustainability</li> <li>Apply the concepts of inter-temporal fairness for strong, weak and environmental sustainability</li> <li>Interpret technology transfer as the role of developed countries</li> </ul>	<p><b>Dynamic Efficiency and Sustainable Development:</b> Sustainability, inter-temporal fairness, strong, concepts of sustainability criterion , win-win situation, the role of developed countries</p>	<p>Lecture Visual presentation Interactive discussion Assignment Group work Case study Role playing</p>	<p>Quiz/MCQ Short answer Essay type answer Presentation performances Report</p>

<ul style="list-style-type: none"> <li>• Explain global climate change according to air pollution, water pollution</li> <li>• Describe ozone depletion and global warming</li> <li>• Discuss incentive based approaches for reducing greenhouse gas emissions</li> <li>• Interpret international efforts in global warming including industrial ecology and pollution prevention, Kyoto protocol.</li> <li>• Detect the dimension of globalization.</li> <li>• Compare the relationship between trade and environment, trade and carbon.</li> <li>• Describe regional trade agreement and environmental trade restrictions.</li> </ul>	<p><b>Global Environmental Issues:</b> Climate change and global accords, Air quality: The standard setting process, Global air quality: Policies for Ozone depletion and global warming, Water quality, Improving water quality: Controlling point and nonpoint sources, Protecting drinking Water, Sustainable approaches: Industrial ecology and pollution prevention, Kyoto Protocol, globalization</p>	<p>Lecture Visual presentation Interactive discussion Assignment Group work Case study Role playing</p>	<p>Quiz/MCQ Short answer Essay type answer Presentation performances Report</p>
<ul style="list-style-type: none"> <li>• Explain incidence of pollution control costs</li> <li>• Discuss the incidence on household and recommend policy</li> </ul>	<p><b>Environmental Justice:</b> The incidence of pollution control costs: Individual industries, The generation of pollutants, The incidence on households, Implications for policy</p>	<p>Lecture Visual presentation Interactive discussion Assignment Group work Case study Role playing</p>	<p>Quiz/MCQ Short answer Essay type answer Presentation performances Report</p>

**Reference Books**

1. Tietenberg, T.; Lewis, L (2011) Environmental and Natural Resource Economics (9th edition), Prentice Hall, Pearson publications.
2. J Bowers. 1997. Sustainability and Environmental Economics: an alternative Text. 1st edition only. NJ: Prentice Hall.
3. G.Carlson., D Zilbermanand J Miranowski.1993. Agricultural and Environmental Resource Economics. 1st edition only. Oxford: Oxford University Press.
4. B Field and M Field . 1997. Environmental Economics: an Introduction. 3rd edition. New York: McGraw Hill
5. N Hanley., J.Shogren and B.White. 2001. Introduction to Environmental Economics. 1st edition only. Oxford: Oxford University Press.
6. C Russell. 2001. Applying Economics to the Environment. 1st edition. Oxford: Oxford University Press.
7. N Hanley., J.Shogren and B.White. 1997. Environmental Economics in Theory and Practice.1st edition only. Basingstoke: Macmillan

<b>Course Code: AGECE 385</b> <b>Course Title: Agricultural Price Analysis (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 3</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is planned to achieve the fundamental knowledge on agricultural product prices, its proper analysis, and forecasting of agricultural product prices.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquaint with the basic concept of agricultural product prices</li> <li>• Amass the knowledge about demand for and supply of agricultural products</li> <li>• Flourish students' understanding regarding the price determination, discovery</li> <li>• Thrive the knowledge of spatial price relationship, marketing margin and price variations over time</li> <li>• Attain perception on role of agricultural price policy and role of price mechanism</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The students will be able to-			
<ul style="list-style-type: none"> <li>• Define agricultural prices and explain its functions and scope</li> <li>• Explain effects of price and income changes and appropriate optimization of consumer preferences</li> <li>• Interpret prices at various stages of marketing, prices according to time frame, administered prices and related concepts</li> </ul>	<b>Introduction:</b> Definition-subject matter-importance. functions of market prices, optimization of consumer preference, effects of price and income changes, importance terms and concepts of prices	Lecture Visual Presentation Interactive discussion Group work Case study Assignment Role playing	Quiz/MCQ Short answer Essay type answer Presentation performances Report
<ul style="list-style-type: none"> <li>• Analyze the determinants of demand for agricultural products</li> <li>• Explain elasticity of demand for agricultural products.</li> <li>• Compare the elasticity of demand and supply for agricultural products.</li> <li>• Appraise Cobweb and Distributed log models</li> </ul>	<b>Demand for Agricultural Products:</b> Determinants of demand for agricultural products, Elasticity's of demand for agricultural products. Supply relationship in agricultural products, Elasticity's: Cobweb and distributed log models.	Lecture Visual Presentation Interactive discussion Group work Case study Assignment Role playing	Quiz/MCQ Short answer Essay type answer Presentation performances Report
<ul style="list-style-type: none"> <li>• Explain determination of prices through the combination of demand and</li> </ul>	<b>Principles of Price Determination-Discovery:</b> Price determination, supply	Lecture Visual Presentation Interactive	Quiz/MCQ Short answer Essay type answer

<p>supply.</p> <ul style="list-style-type: none"> <li>Evaluate forecasting of agricultural product prices, negotiation, exchanges, auctions</li> <li>Compare among formula pricing, bargaining and administered pricing</li> </ul>	<p>and demand, pure competition, cost structure, Price discovery (forecasting), negotiation, exchanges and auctions, formula pricing, bargaining and administrative pricing</p>	<p>discussion Group work Case study Assignment Role playing</p>	<p>Presentation performances Report</p>
<ul style="list-style-type: none"> <li>State the definition and management of marketing margins</li> <li>Explain changes and incidence of changes in margins.</li> <li>Classify types of marketing margins</li> <li>Generalize marketed and marketable surplus</li> </ul>	<p><b>Marketing Margins:</b> Definition and management: Margins for farm products, changes and incidence of changes in margins, market structure, types of marketing margins, constant cost per unit, constant cost percentage of retail price, increasing per unit cost marketed and marketable surplus.</p>	<p>Lecture Visual Presentation Interactive discussion Group work Case study Assignment Role playing</p>	<p>Quiz/MCQ Short answer Essay type answer Presentation performances Report</p>
<ul style="list-style-type: none"> <li>Illustrate the model determining transfer costs</li> <li>Explain effects of tariffs and quotas</li> </ul>	<p><b>Spatial Price Relationships:</b> The Model determining transfer costs, Effect of tariffs and quotas</p>	<p>Lecture Visual Presentation Interactive discussion Group work Case study Assignment Role playing</p>	<p>Quiz/MCQ Short answer Essay type answer Presentation performances Report</p>
<ul style="list-style-type: none"> <li>Apply variations of prices through the movement of time</li> <li>Describe short-period price movement, annual price variations</li> <li>Determine price trend analysis, fitting trend</li> <li>Explain cyclical fluctuations and use of trend in measuring cycle</li> <li>Construct seasonal indices through simple and moving average approach</li> </ul>	<p><b>Price Movements Over Time:</b> Variation through time, short-time, seasonal, annual price variations. Price trend analysis, selecting a period for trend analysis, fitting trend. Cycles, use of trends in measuring cycles, use of moving averages in measuring cycles, seasonality, measuring seasonality, simple</p>	<p>Lecture Visual Presentation Interactive discussion Group work Case study Assignment Role playing</p>	<p>Quiz/MCQ Short answer Essay type answer Presentation performances Report</p>

	average approach, moving average approach		
<ul style="list-style-type: none"> <li>• Explain corrections for inflation</li> <li>• Formulate index numbers and describe its importance and limitation</li> <li>• Analyze base period, parity ratio</li> </ul>	<b>Inflation:</b> Correcting for Inflation: index numbers (importance & limitations), deflating prices, base period, parity ratio	Lecture Visual Presentation Interactive discussion Group work Case study Assignment Role playing	Quiz/MCQ Short answer Essay type answer Presentation performances Report
<ul style="list-style-type: none"> <li>• Describe function of the price system and critical appraisal to the price system in developing economy</li> </ul>	<b>Role of Price Mechanism:</b> Functions of the price system, Problems to be tackled by the price system, critical appraisal of the price system, price system in a developing economy.	Lecture Visual Presentation Interactive discussion Group work Case study Assignment Role playing	Quiz/MCQ Short answer Essay type answer Presentation performances Report
<ul style="list-style-type: none"> <li>• Explain objectives of governmental interventions and method of reducing price instability</li> <li>• Assess Alternative method of supporting price</li> <li>• Describe agricultural price policy in Bangladesh.</li> </ul>	<b>Agricultural Price Policy:</b> Objectives of governmental interventions, method of reducing price instability, Alternative method of <b>bsupporting</b> price, agricultural price policy in Bangladesh.	Lecture Visual Presentation Interactive discussion Group work Case study Assignment Role playing	Quiz/MCQ Short answer Essay type answer Presentation performances Report

### Reference Books

1. Acharya, S. S. and Agarwal, N. L. (1994). Agricultural Price Analysis and Policy, Oxford and IBH Publishing Co. PVT. Ltd., New Delhi.
2. Dahl, D. C. and Hammond, J. W. (1977). Market and Price Analysis: The Agricultural Industries. McGraw Hill book Co., New Delhi, India
3. Goodwin, J. W. (1994). Agricultural Price Analysis and Forecasting, John Wiley and Sons Inc., New York, USA.
4. Hirshleifer, J. (1976). Price Theory and Applications. Prentice Hall International Inc., London, UK.
5. Tomek, W. G. and Robinson, K. L. (2003). Agricultural Product Prices, Cornell University Press, London, UK.

<b>Course Code: AGECE 386</b> <b>Course Title: Agricultural Price Analysis (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 3</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is designed to provide practical knowledge about the concepts of agricultural price analysis.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Gather knowledge about price determination under different market situation and government intervention strategies.</li> <li>• Acquire knowledge about determination of elasticity.</li> <li>• Estimate demand and supply relationship.</li> <li>• Measure marketing margin, producer surplus and consumer surplus.</li> <li>• Enrich students understanding about estimation of market integration, interpretation of different market model and formulation of index number.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The students will be able to-			
<ul style="list-style-type: none"> <li>• Determine and find out the impact of government intervention on the market demand and supply as well as on price of farm products</li> <li>• Compute price flexibility and interpret implications of price flexibility on the pricing of agricultural commodities</li> </ul>	<b>Price Determination:</b> Estimation of market demand and supply of different goods, measuring equilibrium market price in different situation. Effects of government intervention in pricing: effect of tax introduction, subsidies, price support program, government purchase program. Estimation of price flexibilities	Lecture Interactive discussion Group exercise Practical note book preparation Feed back	Class Attendance Essay type answer Practical notebook Viva voce
<ul style="list-style-type: none"> <li>• Compute price elasticity of demand and supply of different agricultural products and interpret implications of price elasticity of demand and supply on the pricing of agricultural commodities</li> </ul>	<b>Elasticity Determination:</b> Estimation of price elasticity of demand and supply of different agricultural products	Lecture Interactive discussion Group exercise Practical note book preparation Feed back	Class Attendance Essay type answer Practical notebook Viva voce
<ul style="list-style-type: none"> <li>• Estimate demand and supply function and calculate equilibrium price and quantity</li> </ul>	<b>Demand and Supply Response:</b> Estimation of supply response relationship,	Lecture Interactive discussion Group exercise Practical note book	Class Attendance Essay type answer Practical



	estimation of demand response relationship.	preparation Feed back	notebook Viva voce
<ul style="list-style-type: none"> <li>Find out marketing margin and determine producer surplus and consumer surplus.</li> </ul>	<b>Marketing Margin:</b> Analysis of marketing margin using primary and secondary data. Measuring producer surplus and consumer surplus.	Lecture Interactive discussion Group exercise Practical note book preparation Feed back	Class Attendance Essay type answer Practical notebook Viva voce
<ul style="list-style-type: none"> <li>Explain and measure market integration by using correlation coefficients methods</li> </ul>	<b>Introduction to Market Models:</b> Market integration analysis, measuring correlation coefficients by using secondary data.	Lecture Interactive discussion Group exercise Practical note book preparation Feed back	Class Attendance Essay type answer Practical notebook Viva voce
<ul style="list-style-type: none"> <li>Construct different seasonal indices of agricultural commodities and interpret its application.</li> <li>Analyze trend of agricultural of products using time series data</li> </ul>	<b>Analysis of Price Variations:</b> Measuring seasonal price variation of agricultural products, Trend analysis of agricultural price using time series data	Lecture Interactive discussion Group exercise Practical note book preparation Feed back	Class Attendance Essay type answer Practical notebook Viva voce
<ul style="list-style-type: none"> <li>Formulate index number and interpret adjustment of index number</li> </ul>	<b>Index Number:</b> Constructing index number, estimation of price trends and price forecasting.	Lecture Interactive discussion Group exercise Practical note book preparation Feed back	Class Attendance Essay type answer Practical notebook Viva voce
<ul style="list-style-type: none"> <li>Gather practical knowledge of agricultural product prices and market conditions</li> </ul>	Field trip to a local retail and wholesale market	Lecture Interactive discussion Feedback Assignment	Report writing Class attendance Report

**Reference Books**

1. Acharya, S. S. and Agarwal, N. L. (1994). Agricultural Price Analysis and Policy, Oxford and IBH Publishing Co. PVT. Ltd., New Delhi.
2. Chandra, S. (1985). Agriculture Price Policy in India. Chugh Publications, Allahbad, India.
3. Goodwin, J.W. (1994). Agricultural Price Analysis and Forecasting, John Wiley and Sons Inc., New York, USA.
4. Pindyck, R.S. and D.L. Rubinfeld, (1976). Econometric Models and Economic Analysis, McGraw-Hill Inc., New Delhi, India.
5. Tomek, W. G. and Robinson, K. L. (2003). Agricultural Product Prices, Cornell University Press, London, UK.

<b>Course Code: AGECE 437</b> <b>Course Title: Econometrics (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 4</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide fundamental knowledge on econometrics, its different tools and techniques to analyze the different economic event.			
<b>Course Learning Outcomes</b>			
<ul style="list-style-type: none"> <li>• Acquire basic knowledge on the use of econometrics in the field of agriculture.</li> <li>• Develop understanding of regression and the analytical process to acquire skill for interpreting different events for decision making.</li> <li>• Explain the importance of qualitative analysis and build the ability to use this concept in decision making.</li> <li>• Enrich student's understanding on different techniques of socio-economic impact evaluation.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define econometrics</li> <li>• Describe the scope and branches of econometrics</li> </ul>	<b>Introduction:</b> Definition, nature, scope and limitations of econometrics, Structure of economic data, economic and econometric models.	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Define OLS</li> <li>• Describe the properties of OLS</li> <li>• Explain the assumptions of OLS.</li> </ul>	<b>Simple Regression Analysis:</b> Ordinary Least Square (OLS) estimates, properties of OLS, regression through the origin and regression on a constant.	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the essence of multiple regression</li> <li>• Explain different problems of parameter estimation</li> </ul>	<b>Multiple Regression Analysis:</b> Estimation of a multiple linear regression model under multicollinearity, autocorrelation and heteroscedasticity.	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Define qualitative regression</li> <li>• Explain limited dependent variable regression</li> <li>• Describe the model specification problem</li> </ul>	<b>Multiple Regression Analysis with Qualitative Variable:</b> LPM, Logit, Probit and Tobit models.  Specification problem and bias; Errors in variables.	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Demonstrate time series analysis</li> <li>• Describe ARDL models</li> <li>• Define and classify selection bias problem</li> <li>• Explain instrumental variables</li> </ul>	<b>Time Series Analysis:</b> Autoregressive and distributed lag models, IV estimation and 2SLS, formulation and identification of simultaneous equation models. Estimation of simultaneous equation models	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer

	by ILS and 2SLS, Use of instrumental variables.		
<ul style="list-style-type: none"> <li>• Define impact evaluation</li> <li>• Identify different technique of project evaluation</li> <li>• Explain evaluation techniques</li> </ul>	<b>Impact Evaluation of Project:</b> Econometric models and estimation methods.	Lecture Visual Presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer

### Reference Books

1. Draper, N. R. And H. Smith (1998). Applied Regression Analysis, Jhon Wiley, New York.
2. Gujarati, D. N. (2003). Basic Econometrics, McGrow Hill Book Company
3. Johnston, J. (1984). Econometric Methods, McGrow Hill, New York
4. Kelijian, H.H. and Oates, W.E. (1981). Introduction of Econometrics, Harper and Raw, New York, London.
5. Koutsoyiannis, A. (1986). Theory of Econometrics, The Macmillan Press Ltd, London.
6. Rao, P. and Miller, R.L. (1971). Applied Econometrics, Belmont, California, Wadsworth.
7. Singh, S.P., Parashar, A.K. and Singh, H.P. (1997) Econometrics and Mathematical Economics, 6<sup>th</sup> edition, S. Chard & Co, Ltd; Ram Nagar, New Delhi-110 055
8. Wooldridge, J.M. (2013). Introductory Econometrics: A Modern Approach, 5<sup>th</sup> edition, South-Western, Cengage Learning, Mason, USA.

<b>Course Code: AGECE 438</b> <b>Course Title: Econometrics (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 4</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to develop the understanding of the theoretical approach to real world problem.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Apply econometric theory to real world problems.</li> <li>• Describe the application of statistical and economics concepts to econometric analysis.</li> <li>• Analyze econometric models using real world data.</li> <li>• Explore knowledge on the use of statistical software like SPSS and STATA.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Estimate and interpret the regression parameters</li> <li>• Detect problems like heteroscedasticity and multicollinearity</li> <li>• Test the validity of OLS assumption</li> </ul>	Estimation of parameters of multiple linear regression model under multicollinearity, autocorrelation and heteroscedasticity.	Lecture Visual presentation Interactive discussion Problem solving	Computer job Problem solving performance Viva-voce Practical note book
<ul style="list-style-type: none"> <li>• Identify the limitation of OLS</li> <li>• Specify the regression equation</li> <li>• Interpret the results using real world data.</li> </ul>	Estimation of parameters of regression when the depended variable is dummy or proportion: LPM, Logit and Probit models.	Lecture Visual presentation Interactive discussion Problem solving	Computer job Problem solving performance Viva-voce Practical note book
<ul style="list-style-type: none"> <li>• Explain ILS and 2SLS</li> <li>• Interpret the findings for decision making</li> </ul>	Estimation of simultaneous equation models by ILS and 2SLS.	Lecture Visual presentation Interactive discussion Problem solving	Computer job Problem solving performance Viva-voce Practical note book
<ul style="list-style-type: none"> <li>• Explain different types of production function</li> <li>• Estimate parameters and interpret the findings</li> </ul>	Estimation of parameters of Cobb-Douglas production function and CES production function.	Lecture Visual presentation Interactive discussion Problem solving	Computer job Problem solving performance Viva-voce Practical note book
<ul style="list-style-type: none"> <li>• Explain input-output analysis and prepare input-output matrix</li> </ul>	Construction of input-output table.	Lecture Visual presentation	Computer job Problem solving performance

		Interactive discussion Problem solving	Viva-voce Practical note book
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### Reference Books

1. Draper, N. R. And H. Smith (1998) Applied Regression Analysis, John Wiley, New York.
2. Gujarati, D. N. (2003) Basic Econometrics, McGraw Hill Book Company
3. Johnston, J. (1984) Econometric Methods, McGraw Hill, New York
4. Judge, G.G. et al. (1988) Introduction to the Theory and Practice of Econometrics, Second Edition, Wiley, New York.
5. Kelijian, H.H. and Oates, W.E. (1981) Introduction of Econometrics, Harper and Row, New York, London.
6. Koutsoyiannis, A. (1986) Theory of Econometrics (Latest edition), The Macmillan Press Ltd, London.
7. Rao, P. & Miller, R.L. (1971) Applied Econometrics, Belmont, California, Wadsworth.
8. Shil, R. N. and S.C. Debnath (1992) An Introduction to Theory of Statistics, Minati Shil and Amita Debnath, Mymensingh.
9. Singh, S.P; Parashar, A.K. and Singh, H.P.(6<sup>th</sup> edition, 1997) Econometrics and Mathematical Economics, S. Chard & Co, Ltd; Ram Nagar, New Delhi-110 055
10. Yule, G.U. & M. G. Kendall (1965) An Introduction to the Theory of Statistics, Charles Griffin, London

<b>Course Code: AGECE 439</b> <b>Course Title: Agricultural Development Economics (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 4</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to familiarized students with a variety of economic development theories and the role of the government and agriculture in economic development.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Explain the obstacles and economic and non-economic factors of economic growth.</li> <li>• Describe the classical, neoclassical and modern economic growth theories</li> <li>• Acquire knowledge about theories and models of agricultural development.</li> <li>• Enrich knowledge about sustainable development goals (SDG).</li> <li>• Develop knowledge on Globalization and its impact on agriculture and agricultural trade.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to:	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Explain the difference between economic development and economic growth</li> <li>• Measure the economic development and welfare</li> <li>• Identify the criteria for under development and obstacles to economic development</li> <li>• Explain the economic and non-economic factors of economic growth.</li> </ul>	<b>Introduction:</b> Development economics – scope and importance - economic development and economic growth - divergence in concept and approach - indicators and measurement of economic development, Measures of welfare, criteria for under development, obstacles to economic development, economic and non-economic factors of economic growth.	Lecture Interactive discussion Visual presentation	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain the stages of economic development</li> <li>• Identify the determinants of economic growth.</li> <li>• Explain the classical, neo-classical and modern theories of economic growth</li> <li>• Describe the Government role and measure to promote economic development</li> </ul>	<b>Economic development:</b> Meaning, stages of economic development, determinants of economic growth. Theories of economic growth, Ricardian growth model, The Harrod – Domar Model, The Neo classical Model of Growth, The Kaldor Model, Optimal Economic Growth, Recent experiences of developing countries and the economies in transition, Role of state in economic development, government measures to	Lecture Interactive discussion Visual presentation	Quiz/MCQ Short answer Essay type answer

	promote economic development, Introduction to development planning.		
<ul style="list-style-type: none"> <li>• Explain the theories of agricultural development</li> <li>• Describe the issues regarding development, poverty, inequality, unemployment and environmental degradation</li> <li>• Identify the policy options for sustainable agricultural development.</li> </ul>	<p><b>Role of agriculture in economic development:</b></p> <p>Theories of agricultural development, Population and food supply, development issues, poverty, inequality, unemployment and environmental degradation, models of agricultural development, induced innovation model, policy options for sustainable agricultural development.</p>	Lecture Interactive discussion Visual presentation	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain the concepts, goals and objectives of SDGs.</li> <li>• Identify the strategies to achieve the SDGs</li> <li>• Describe the role of different national and international organizations to achieve the SDG.</li> </ul>	<p><b>Sustainable Development Goals (SDGs):</b> concepts of SDGs, goals and objectives, strategies to achieve the goals, role of different national and international organizations to achieve the SDG.</p>	Lecture Interactive discussion Visual presentation	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain about globalization</li> <li>• Describe the traditional role of agriculture in era of globalization</li> <li>• Identify the effects of globalization on world agricultural trade</li> </ul>	<p><b>Globalization and the Relevance of Development Policy Analysis:</b> Globalization and the traditional role of agriculture, Globalization's effects on world agricultural trade, agricultural globalization in developing countries.</p>	Lecture Interactive discussion Visual presentation	Quiz/MCQ Short answer Essay type answer

#### Reference Books

1. Chakaravathi RM. 1986. Under Development and Choices in Agriculture. HeritagePubl., New Delhi.
2. Eicher KC & Staatz JM. 1998. International Agricultural Development. JohnsHopkins Univ. Press.
3. Frank E. 1992. Agricultural Polices in Developing Countries. Cambridge Univ.Press.
4. Ghatak S & Ingersent K. 1984. Agriculture and Economic Development. Select Book Service Syndicate, New Delhi.
5. Jhingan ML. 1998. The Economics of Development and Planning. Vrinda Publ.
6. Jules PN. 1995. Regenerating Agriculture – Polices and Practice for Sustainability and Self Reliance. Vikas Publ. House.



<b>Course Code: AGECE 487</b> <b>Course Title: Farm Management (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 4</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is designed to gain the proficiency of farm management and applications of economic principles for measuring farm performances.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquaint with the basic concept of farm management</li> <li>• Amass the techniques of measures of whole farm performance</li> <li>• Flourish students' understanding regarding the measurement of farm efficiency</li> <li>• Thrive the knowledge of farm planning and budgeting</li> <li>• Obtain conversance about the implications and applications of farm planning under risk and uncertainty</li> <li>• Attain perception on agricultural project analysis</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The students will be able to-			
<ul style="list-style-type: none"> <li>• Define farm management and state the definition of farm management</li> <li>• Identify the relation of farm management to other agricultural sciences</li> <li>• Explain economic principles of farming and operations of farm</li> </ul>	<b>Introduction:</b> Definition of farm management, functions of management, relation of farm management to other agricultural sciences. the business principles of farming. application of economic principles to the organization and operation of farms.	Lecture Visual presentation Interactive discussion Group work Case study Role playing Assignment	Quiz/MCQ Short answer Essay type answer Presentation performances Report
<ul style="list-style-type: none"> <li>• Compute farm performance by using cash flow measures</li> <li>• Solve problem relating to income and profitability of agricultural farms</li> <li>• Assess capital and debt position of a firm</li> </ul>	<b>Measures of Whole-Farm Performance:</b> Cash flow measures, income and profitability measures, measures of capital and debt position.	Lecture Visual presentation Interactive discussion Group work Case study Role playing Assignment	Quiz/MCQ Short answer Essay type answer Presentation performances Report
<ul style="list-style-type: none"> <li>• Explain production and labor efficiency</li> <li>• Distinguish between the methods of production and labor efficiency</li> </ul>	<b>Measuring Farm Efficiency:</b> Production efficiency, measures of production efficiency, methods of improving	Lecture Visual presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer Presentation performances

<ul style="list-style-type: none"> <li>Assesses the methods used for measuring production and labor efficiency</li> </ul>	<p>production efficiency, labor efficiency: Measures of labor efficiency, methods of improving labor efficiency in the use of farm labor.</p>	<p>Group work Case study Role playing Assignment</p>	<p>Report</p>
<ul style="list-style-type: none"> <li>State the definition of complete, partial and break-even budgeting</li> <li>Explain the steps involved in different types of budgeting</li> <li>Differentiate between complete and partial budgeting</li> <li>Assess programming techniques and assumptions of linear programming</li> <li>Solve problems of linear programming relating to farm planning and budgeting</li> </ul>	<p><b>Farm Planning and Budgeting:</b> Complete budgeting and related difficulties. Partial budgeting. Break-even budgeting. Programming techniques, Linear Programming: Quantitative components, assumptions of linear programming, evaluation of linear programming</p>	<p>Lecture Visual presentation Interactive discussion Group work Case study Role playing Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Presentation performances Report</p>
<ul style="list-style-type: none"> <li>Define farm risk and uncertainty</li> <li>Explain types of risks and uncertainty</li> <li>Distinguish between farm risks and uncertainty</li> <li>Describe decision tree analysis</li> <li>Illustrates different concepts of farm risk management strategies</li> <li>Solve problems relating to agricultural farm risks analysis</li> </ul>	<p><b>Farm Planning under Risk and Uncertainty:</b> The degree of uncertainty, Type of uncertainty, decision analysis under risk and uncertainty.</p>	<p>Lecture Visual presentation Interactive discussion Group work Case study Role playing Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Presentation performances Report</p>
<ul style="list-style-type: none"> <li>Explain the aspects of project analysis</li> <li>Justify the decision on the basis of BCR, NPV and IRR of a project</li> <li>Explain shadow pricing</li> </ul>	<p><b>Agricultural Projects Analysis:</b> Definition of a project, aspects of project analysis, points of view of project analysis, identification of costs and benefits of</p>	<p>Lecture Visual presentation Interactive discussion Group work Case study</p>	<p>Quiz/MCQ Short answer Essay type answer Presentation performances Report</p>

for economic analysis • Appraise sensitivity analysis	agricultural projects, shadow pricing for economic analysis, undiscounted measures of project worth, discounted measures of project worth, sensitivity analysis.	Role playing Assignment	
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**Reference Books**

1. Barnard, C.S. and Nix, J.S (1973), Farm Planning and Control, Cambridge University Press.
2. Dillon, J.L. and Hardaker, J.B.(1993), Farm Management Research for India - Theories and Practices, Allied Publishers Ltd.
3. Efferson, J.N. (1953), Principles of Farm Management, McGraw Hill Book Company, New York.
4. Johl, S.S. and Kapur, T.R. (1973), Fundamental of Farm Business Management, Kalyani Publishers, New Delhi.
5. Kahlon, A.S. and Singh, K. (1992), Economics of Farm Management in Small Farmers Development, FAO, Rome.
6. Smith, D.T. (edited) (1989), Farm Management, U.S. Government Printing Office, Washington, D.C.
7. Yang, W.Y. (1958), Methods of Farm Management Investigation, FAO, Rome.

<b>Course Code: AGECE 488</b> <b>Course Title: Farm Management (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 4</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is designed to provide practical knowledge about the concepts of farm management.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Measure farm efficiency.</li> <li>• Demonstrate farm planning and budgeting.</li> <li>• Undertake agricultural project analysis</li> <li>• Demonstrate economic and financial analysis.</li> </ul>			
<b>Intended Learning Outcomes(ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategy</b>
The students will be able to-			
<ul style="list-style-type: none"> <li>• Compute production efficiency, labor efficiency and interpret its application.</li> <li>• Estimate Resource use efficiency.</li> </ul>	<b>Measuring Farm Efficiency</b> Production efficiency, labor efficiency, resource use efficiency (allocative efficiency, economic efficiency).	Lecture Interactive discussion Group exercise Practical notebook preparation Feedback	Class attendance Essay type answer Practical notebook Viva voce
<ul style="list-style-type: none"> <li>• Explain concepts of partial and complete budgeting and its application</li> <li>• Calculate partial and complete budget</li> </ul>	<b>Exercise on Farm Planning And Budgeting</b> Partial and complete budgeting	Lecture Interactive discussion Group exercise Practical notebook preparation Feedback	Class attendance Essay type answer Practical notebook Viva voce

<ul style="list-style-type: none"> <li>• Find out Benefit-cost ratio, net present value and internal rate of return.</li> <li>• Assess shadow pricing, sensitivity analysis and explain their implications in the real economic condition.</li> <li>• Perform economic and financial analysis of different agricultural commodities and interpret on the basis of results for national level implication.</li> </ul>	<p><b>Agricultural Projects Analysis</b>  Calculation of BCR, NPV, IRR.  Financial and economic analysis.  Shadow pricing.  Sensitivity analysis.</p>	Lecture Interactive discussion Group exercise Practical note book preparation Feedback	Class attendance Essay type answer Practical notebook Viva voce
<ul style="list-style-type: none"> <li>• Justify modern practices using in the agro-processing farm</li> <li>• Propose appropriate farm management knowledge and provide innovative idea for measures of farming efficiency</li> </ul>	Field trip to a agricultural enterprise or agro-processing farm	Lecture Interactive discussion Field visit Feedback	Class attendance Essay type answer Practical notebook Viva voce

**Reference Books**

1. Barnard, C.S. and Nix, J.S. (1978), Farm Planning and control, Cambridge University Press, Cambridge.
2. Cochrane W.G. (1965), Sampling Techniques, Modern Asia Edition, John Wiley & Sons Inc.
3. Dillon, J.L. and Hardaker, J.B. (1993), Farm management Research for small Farmers Development, FAO, Rome.
4. Gittinger, J.P. (1972), Economic Analysis of Agricultural Project, The John Hopkins University Press, Baltimore and London.
5. Noman, L. and Coote, R.B.(1976), The Farm Business, Longman Pulisher, London & New York.
6. Singh, M.K. and Mahadevan, A. (1990), Project Evaluation and Management, Discovery Published House, New Delhi.
7. Yang, W.Y. (1958), Methods of farm Management Investigation, FAO, Rome.

<b>Course Code: AGECE 489</b> <b>Course Title: Agricultural Policy and Planning (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 4</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is designed to help the student to acquire basic knowledge about agricultural policy and planning.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Develop students' knowledge and skill on agricultural policy and planning of third world countries.</li> <li>• Gain knowledge about the techniques and strategy for agricultural and natural resource sector planning</li> <li>• Enrich student's knowledge about rural development planning in Bangladesh.</li> <li>• Acquire knowledge about different forms of employment and underemployment</li> <li>• Develop students' knowledge on land reform policies and programmes for small scale agriculture.</li> <li>• Enrich student's knowledge about different policies regarding food production and distribution</li> <li>• Develop students' knowledge about the pricing policy of inputs and output as well as economics of agricultural education and research</li> <li>• Gain knowledge about the Challenges for 21<sup>st</sup> Century</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The students will be able to- <ul style="list-style-type: none"> <li>• Explain the concept of agricultural policy and planning</li> <li>• Describe the experiences and performances of agricultural planning in the third world countries</li> <li>• Identify the needs for agricultural policy and planning</li> </ul>	<b>Introduction:</b> Concepts of economic policy and planning with special reference to agriculture, history of agricultural planning in the third world countries-experiences, evidences and performances.	Lecture Interactive discussion Visual presentation	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain the Agriculture and natural resource sector planning in developing countries</li> <li>• Describe and identify the need for Spatial agricultural development planning</li> <li>• Identify the techniques and strategy for agricultural planning</li> </ul>	<b>Agriculture and Natural Resource Sector Planning:</b> Agriculture and natural resource sector planning in developing countries, spatial agricultural development planning, inter-sectoral resource transfer process, techniques and strategy for agricultural planning.	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Explain the Integrated rural development planning</li> <li>• Describe the rural development planning in Bangladesh</li> <li>• Identify the strategy for rural and economic development</li> </ul>	<p><b>Planning Rural Development:</b></p> <p>Integrated rural development planning, rural development planning in Bangladesh, Towards strategy for rural and economic development.</p>	<p>Lecture Interactive discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Explain the nature of Rural-urban population structure</li> <li>• Identify the nature, extent and dimension of unemployment and labour underutilization</li> <li>• Explain the need for labour wage policy</li> <li>• Identify the causes and consequences of rural urban migration</li> <li>• Analyze the non-formal employment in Bangladesh</li> </ul>	<p><b>Labour Supply and Environment Policy:</b></p> <p>Rural-urban population structure, nature and extent of unemployment, dimension of labour underutilization, contractual arrangements for labour wage policy, rural -urban migration, non-formal employment in Bangladesh.</p>	<p>Lecture Interactive discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Explain the need for and theory of land reform</li> <li>• Describe the welfare basis of land reform</li> <li>• Analyze the land reform policies and programmes for small scale agriculture</li> </ul>	<p><b>Land Policy:</b></p> <p>Land development policy, theory of land reform, welfare basis of land reform, land reform policies and programmes for small scale agriculture.</p>	<p>Lecture Interactive discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Explain the basic needs and nutrition policy.</li> <li>• Analyze the food crops production and distribution policies in Bangladesh</li> <li>• Assess the different aspects of food security</li> </ul>	<p><b>Food Policy:</b></p> <p>Basic needs and nutrition policy, food grain and other food crops production and distribution policies in Bangladesh, food security and vulnerability: FFWP, FFE, VGF evolving food</p>	<p>Lecture Interactive discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Explain the agricultural pricing policies in developing countries</li> <li>• Identify the need for input subsidy and price support</li> </ul>	<p><b>Agricultural Pricing Policy and Marketing System:</b></p> <p>Agricultural pricing policies in developing countries-input policy, input subsidy and</p>	<p>Lecture Interactive discussion Visual presentation</p>	<p>Quiz/MCQ Short answer Essay type answer</p>

<ul style="list-style-type: none"> <li>programme</li> <li>Evaluate the agricultural credit policy</li> <li>Assess the pricing policy and marketing system in Bangladesh</li> <li>Identify and evaluate the issues in food pricing policy</li> </ul>	price support, agricultural credit policy, optimum pricing and marketing system, pricing policy and marketing system in Bangladesh, issues in food pricing policy.	Assignment	Report
<ul style="list-style-type: none"> <li>Explain the economics of agricultural education and research</li> <li>Identify the barriers to agricultural research in LDCs</li> <li>Describe the condition of agricultural education and research in Bangladesh</li> <li>Identify and analyze the Challenges for 21<sup>st</sup> Century</li> <li>Explain the welfare aspects of different agricultural policies</li> </ul>	<b>Agricultural Education and Research Policy:</b> Economics of agricultural education and research, barriers to agricultural research in LDCs, agricultural education and research in Bangladesh. Challenges for 21 <sup>st</sup> Century: Market economy, WTO, SAPTA and SAARC,	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report

### Reference Books

- Adams, Dale W. and Dougls, H. Grham (1981): A Critique of Traditional Agricultural Credit Projects and Policies.
- Journal of Developing Economics, 8(3)347-66 (ISBN-0-304-3878).
- Conyers, Diana and Hill, Peter (1982): An Introduction to Development Planning in the Third World. John Willey & Sons, N.Y., USA.
- Ghatak, S. and Ingersnt, K. (1984): Agriculture and Economic Development. Hervestor Press, Sussex, England.
- Haque, Ejazul (1984): The Basic Need Approach –Planning for Core Needs in Bangladesh. University Press Limited, Dhaka.
- Kenneth, E. Boulding (1951): Principles of Economic Policy. Prentice Hall, Inc., New Jersey, USA.
- Lipton, Micheal (1974): Towards Theory of Land Reform. Agrarian Reform and Agrarian Reformism, Faber and Faber, London.
- Malasis, L. (1975): Agriculture and Development Process-tentative guidelines for teaching. The UNESCO Press, Paris.
- Meier, Gerald M. (1975): Leading Issues in Economic Development. Oxford University Press, London, UK.
- Mellor, John L. (1976): Planning and Strategy for Growth. The New Economics of Growth, Cornell University Press, Ithaca, USA.
- Satter, M.S. (2001): Agricultural Planning and Achievement in Bangladesh. Paragon Publishers, Dhaka, Bangladesh



# Department of Agribusiness and Marketing

## Course Layout

### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	AGBM 125: Introduction to Agribusiness (Theory)	3	1	I
2.	AGBM 175: Business Communication (Theory)	2	1	II
3.	AGBM 225: Principles of Marketing (Theory)	3	2	I
4.	AGBM 275: Agricultural Marketing (Theory)	3	2	II
5.	AGBM 325: Business Ethics and Corporate Social Responsibility (Theory)	3	3	I
6.	AGBM 327: Supply Chain Management (Theory)	3	3	I
7.	AGBM 329: E-Business (Theory)	2	3	I
8.	AGBM 375: Small and Medium Enterprise Development (Theory)	3	3	II
9.	AGBM 376: Small and Medium Enterprise Development (Practical)	1	3	II
10.	AGBM 425: International Business (Theory)	3	4	I
11.	AGBM 475: Agribusiness Management (Theory)	3	4	II
	Theory	28		
	Practical	1		
	<b>Total</b>	<b>29</b>		

<b>Course Code: AGBM 125</b> <b>Course Title: Introduction to Agribusiness (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 1</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide fundamental knowledge on shifting procedure from subsistence level of agriculture to commercialization.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Acquire knowledge on fundamentals of agribusiness</li> <li>• Enrich knowledge on planning, organizing, targeting, positioning of an agribusiness</li> <li>• Implement knowledge about risk management of agribusiness in Bangladesh</li> <li>• Seek knowledge about the problems and prospects of ICT in Agribusiness</li> <li>• Detect major obstacles and opportunities of SME sector in Bangladesh</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define agribusiness</li> <li>• Discuss the role of agribusiness in economic development</li> <li>• Describe the strategies for agribusiness development in Bangladesh</li> <li>• Explain agricultural inputs market</li> <li>• Illustrate opportunities for investment in agribusiness</li> <li>• Compare different forms of business entities</li> </ul>	Definition of agribusiness, Is farming an agribusiness? Role of agribusiness in economic development, sector and financing of agribusiness, strategies for agribusiness development in Bangladesh, agricultural inputs market, potentials for agribusiness in Bangladesh, opportunities for investment in agribusiness, agriculture support agencies in Bangladesh, agricultural markets and competition, different forms of business entities, process for forming new venture, managing the new venture	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Define planning</li> <li>• Discuss the importance and types of planning</li> <li>• Narrate forms of organization</li> <li>• Explain Porter's five forces model</li> <li>• Demonstrate segmentation, targeting and positioning</li> </ul>	Definition of planning, importance and types of planning, define organization, forms of organization, porter's five forces model, the marketing mix: 4 ps of marketing, define segmentation, targeting and positioning, process for achieving marketing objectives, operations and inventory management plan, definition of business plan and financial plan.	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Define supply chain</li> <li>• Explain advantages of supply chain</li> <li>• Describe major supply chains in Bangladesh</li> <li>• Discuss the factors affecting supply chain in Bangladesh</li> <li>• Define value chain</li> <li>• Illustrate the factors affecting value chain</li> </ul>	<p>Definition of supply chain, difference of supply chain and value chain, advantages of supply chain, major supply chains in Bangladesh, supply models in Bangladesh, financing in supply chain, factors affecting supply chain in Bangladesh, definition of value chain, value chain business models, advantages of value chain, factors affecting value chain, inclusive value chain</p>	<p>Lecture Interactive discussion Visual presentation Assignment Case study</p>	<p>Quiz Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Narrate bottom of pyramid market</li> <li>• Explain the nature and challenges of BOP market</li> <li>• Discuss inclusive market development</li> <li>• Illustrate key guiding principles for IMD facilitation</li> </ul>	<p>Understand bottom of pyramid (BOP) market, nature of BOP market, challenges of BOP market, steps to reach bop market, understanding inclusive market development (IMD), key guiding principles for IMD facilitation, IMD and government initiatives for inclusive development</p>	<p>Lecture Interactive discussion Visual presentation Assignment Case study</p>	<p>Quiz Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Describe risk management in agribusiness</li> <li>• Define crop insurance, forward marketing, future market, future contract, contract farming</li> <li>• Detect major challenges of contract farming in Bangladesh</li> <li>• Predict the benefits of proper post harvest management</li> <li>• Discuss food safety and quality control measures</li> </ul>	<p>Risk management in agribusiness, risk measuring techniques, define hedging and speculation, definition crop insurance, forward marketing, future market, future contract, contract farming as a tool for risk management, types of contract farming, challenges of contract farming in Bangladesh, contract farming as a model for IMD, definition of post-harvest management, benefits of proper post-harvest management, factors affecting post-harvest management, food safety and quality control measures, comprehensive policy for post-harvest management</p>	<p>Lecture Interactive discussion Visual presentation Assignment Case study</p>	<p>Quiz Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Illustrate the role of ICT in agribusiness</li> <li>• Classify market access ICT services</li> <li>• Conclude future of ICT in agricultural value</li> </ul>	<p>Role of ICT in agribusiness, types of market access ICT service, issues and challenges for market access ICT services, future of ICT in agricultural value chain, definition of branding, importance</p>	<p>Lecture Interactive discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

<p>chain</p> <ul style="list-style-type: none"> <li>• Define and show importance of branding</li> <li>• Discuss agro product branding as a strategy for agricultural marketing</li> <li>• Recognize the challenges of agro product branding in Bangladesh</li> </ul>	<p>of branding in agribusiness, brand building models, different kinds of branding, agro product branding as a strategy for agricultural marketing, branding in agricultural input market, challenges in agro product branding, opportunities of agro product branding</p>	<p>Case study</p>	
<ul style="list-style-type: none"> <li>• Know the concepts of organization</li> <li>• Define business organization</li> <li>• Identify the characteristics of a successful business organization</li> <li>• Discuss the functions of a business organization</li> <li>• Identify the scope of business organization</li> <li>• Find out the factors considering business organization</li> <li>• Identify the major functions of business in Bangladesh</li> </ul>	<p>Concept of business organization, characteristics of a business organization, objectives of a business organization, key elements of a business organization, importance of business organization, factors to be considered for starting a business, functions of business organization, forms of business organizations, definition of sole proprietorship business, characteristics of sole proprietorship business, benefits of sole proprietorship business, definition and features of partnership business, concept and features of joint stock company, definition and features of cooperative society, state enterprise, features of state enterprise, business combination concept.</p>	<p>Lecture Interactive discussion Visual presentation Assignment Case study</p>	<p>Quiz Short answer Essay type Report</p>
<ul style="list-style-type: none"> <li>• Know the concepts of entrepreneurship</li> <li>• Identify the characteristics of a successful entrepreneur</li> <li>• Understand the importance of entrepreneurship</li> <li>• Discuss the functions of entrepreneurship</li> <li>• Identify the different classifications of entrepreneurs</li> </ul>	<p>Concept of entrepreneurship and entrepreneur, characteristics of entrepreneur, qualities of entrepreneur, functions of entrepreneur, importance of an entrepreneurs, classification of entrepreneurs, difference between entrepreneurship and entrepreneur, difference between entrepreneur and manager, problems of taking entrepreneurial role in Bangladesh, ways to remove the problems of taking entrepreneurial role in</p>	<p>Lecture Interactive discussion Visual presentation Assignment Case study</p>	<p>Quiz Short answer Essay type Report</p>

<ul style="list-style-type: none"> <li>• Differentiate between entrepreneur and manager</li> <li>• To identify the problems faced by entrepreneurs and reasonable solutions</li> </ul>	Bangladesh, entrepreneurial process, environmental factors influencing entrepreneurship, definition and features of self-employment, necessity of self-employment, institutional support for technical and financial in Bangladesh		
<ul style="list-style-type: none"> <li>• Discuss concept of agro enterprise</li> <li>• Explain the role of SMEs in the economy of Bangladesh</li> <li>• Describe women entrepreneurs in Bangladesh</li> <li>• Detect constraints faced by SMEs</li> </ul>	Concept of agro enterprise, role of SMEs in the economy of Bangladesh, status of SME in Bangladesh, women entrepreneurs in Bangladesh, challenges and opportunities of women entrepreneurs in Bangladesh, constraints faced by SMEs	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz Short answer Essay type Report
<ul style="list-style-type: none"> <li>• Acquire practical knowledge on related areas</li> </ul>	Field trip	Assignment	Report

### Reference Books

1. Broadway, A.C and Broadway, A.A., 2002. A Text Book of Agribusiness Management. 1<sup>st</sup> Edn. Kalyani Pub., New Delhi, India.
2. Ricketts, C and Rawlins, O., 2001. Introduction to Agribusiness. 1<sup>st</sup> Edn. Delmar Pub., USA.
3. Rahman, M.A., and Islam, M.R., 2013. Introduction to business. 1<sup>st</sup> Edn. University Publication, Bangladesh.

<b>Course Code: AGBM 175</b> <b>Course Title: Business Communications (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level:1</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to help students for achieving knowledge and skills which will enable to communicate effectively in workplace relating to business issues.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Use a strategic communication model and critical thinking to identify objectives, analyze audiences, and choose the most effective structure and style for delivering strategically sound written and spoken messages.</li> <li>• Practice principles of effective business writing and document design in all written documents.</li> <li>• Build an understanding of different organizational cultures, business practices, and social norms to communicate more effectively in domestic and cross-cultural business contexts.</li> </ul>			
<b>Intended Learning outcomes (ILOs)</b> The students will be able to -	<b>Course Content</b>	<b>Teaching-Learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Outline an overview of communication</li> <li>• Discuss objectives of communication</li> <li>• Evaluate media of communication</li> <li>• Classify business communication</li> <li>• Identify various types of communication barriers</li> <li>• Interpret principles of communication</li> </ul>	<b>Essential of Communication</b> Introducing communication, communication situation, <b>Objectives of Communication</b> advice, suggestion, persuasion, education, motivation. <b>Media of Communication</b> Written communication, oral communication, face to face communication, audio visual communication, computer based communication <b>Types of Communication</b> Upward, downward, horizontal communication, grape vine, consensus <b>Barriers to Communication</b> Wrong choice of medium; physical, semantic, socio-psychological barriers <b>Principles of Communication</b> Clarity, completeness, conciseness, consideration, courtesy, correctness,	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Describe importance of communication skills</li> <li>• Design communication model</li> <li>• Categorize business</li> </ul>	<b>Understanding Workplace Communication:</b> Importance of communication skill, challenges of communication, categories of business communication,	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report

<p>communication</p> <ul style="list-style-type: none"> <li>• Justify communication challenges</li> <li>• Describe the factors that affect communication in business world.</li> </ul>	<p>variation in communication, communication model.</p>		
<ul style="list-style-type: none"> <li>• Explain why cross cultural communication is important</li> <li>• Describe dimension of cultural differences</li> <li>• Discuss cultural differences regarding to body position and movement</li> <li>• Analyze the impact of cultural views and practices concerning human relation and use this knowledge effectively in communicating</li> <li>• Describe how one can enhance cross cultural communication skills</li> </ul>	<p><b>Communicating Across Cultures:</b> Importance of cross cultural communication, dimension of cultural difference, major factors that affect culture, body positions and movement, views and practices concerning human relationship, problems of language, advice for communicating across culture.</p>	<p>Lecture Visual Presentation Discussion Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Explain role of adaptation in selecting words that communicate</li> <li>• Discuss suggestions for selecting words</li> <li>• Suggest for nondiscriminatory writing</li> <li>• Use technical words and acronyms appropriately</li> <li>• Show slang and clichés with caution</li> </ul>	<p><b>Adapting Your Words to Your Reader:</b> Importance of adaptation, suggestion for selecting words( familiar, short words, use of slang&amp; popular clichés, use of technical words, precise language) suggestions for nondiscriminatory writing (use of gender neutral words, avoid words that stereotype by race, age, nationality)</p>	<p>Lecture Visual presentation Discussion Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Discuss the nine demographic considerations to use to segment consumer market.</li> <li>• Interpret how socio - cultural values may be quantified</li> </ul>	<p><b>Constructing Clear Sentences and Paragraph</b> Care in sentence design ( sentence content, economize on words, give sentences unity, word sentences logically) care in paragraph design( give paragraph unity, keep paragraph short, use of topic sentences,</p>	<p>Lecture Visual Presentation Discussion Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

	make paragraphs coherent)		
<ul style="list-style-type: none"> <li>• Define report</li> <li>• Discuss types, content and features of report</li> <li>• Discuss content of thesis</li> <li>• Contrast between long and short report</li> </ul>	<b>Business Report Writing</b> Importance of report writing, format of business report, types of business report, ideal format of thesis, long report, short report, features of report,	Lecture Visual presentation Discussion Workshop/ Seminar	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Define letter</li> <li>• Discuss classification and elements of letter</li> <li>• Compare and contrast between personal letter and business letter</li> <li>• Write various types of letter used in business</li> <li>• Differentiate between CV and Resume</li> <li>• Prepare Press release, notice, agenda, Minutes</li> <li>• Contrast between agenda and minutes.</li> </ul>	<b>Letter and CV Writing</b> Definition of letter, classification of letter, importance of letter writing, features of letter, specimen of various letters, notice, agenda, minutes, press release, definition of Curriculum Vitae(CV), resume, features of CV& resume, difference between CV& resume,	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Discuss electronic communication</li> <li>• Describe media of e-communication</li> <li>• Evaluate impact of Facebook in our life</li> <li>• Demonstrate how to write E-mail</li> </ul>	<b>Modern Technologies in Business Communication</b> Overview of electronic communication; advantages, disadvantages of electronic communication; media of E-communication; internet, facebook , Fax, Telex, e-mail; multimedia	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Acquire practical knowledge of related field based on above mentioned topics and make a difference among the different organizations.</li> </ul>	Demonstrate and practical visualization along with practice of the different types of proposal, report, memo, notice, office order, agenda, meeting minutes, etc. Moreover, understanding the cultures and practices of communication in the different organization in Bangladesh.	Lab Practice and Presentation, Organization visit	Case Studies, Assignment, Report and Presentation.

### Reference Books

1. Rentz,K and Rentz, P.(2015); Lesikar’s Business Communication,13<sup>th</sup> Edition, McGraw-Hill, USA.
2. Pal,R and Korlahalli. J. S.(2011); Essentials of Business Communication, 15<sup>th</sup> Edition, Sultan Chand & Sons, India.



<b>Course code: AGBM 225</b> <b>Course Title: Principles of Marketing</b>	<b>Credit Hour: 3</b>	<b>Level:2</b>	<b>Semester: I</b>
<b>Rationale:</b> This course explains and demonstrates the basic knowledge and concepts of marketing with particular attention to the specific characteristics of service oriented industries such as the hospitality industry, tourism, events, sports and retail.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Explain techniques and the concepts that practicing marketers use to develop products and successful marketing campaigns.</li> <li>• Examine the evaluation of marketing theory and environment in which it operates.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define the basic concept of marketing.</li> <li>• Describe the role of marketing in various economic systems.</li> </ul>	<b>Concept of Marketing:</b> definition, nature, objective, scope & importance, marketing concepts, approaches to study of marketing, role of marketing, marketing in various economic systems.	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Describe the marketing process by which companies create value for consumers.</li> <li>• Explain countrywide strategic planning and its steps.</li> </ul>	<b>Company and Marketing Strategy:</b> strategic planning, marketing strategy and marketing mix, managing the marketing effort, return on marketing investment.	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Describe the environmental forces that affect the company's ability to serve its customers.</li> <li>• Explain how changes in the demographic and economic environments affect marketing decisions.</li> <li>• Identify the major trends in the firm's natural and technological environment.</li> </ul>	<b>Understanding the Market Place and Consumers:</b> The company's macro & micro environment, organization's internal environment, responding to the marketing environment.	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>Define the marketing information system and discuss its parts.</li> <li>Outline the steps in the marketing research process.</li> <li>Analyze how companies use marketing information.</li> </ul>	<p><b>Managing Marketing Information to Gain Consumer Insight:</b> Marketing information and customer insights, assessing marketing information need, marketing intelligence, marketing research, developing marketing research plan and implementation.</p>	<p>Lecture Interactive discussion Visual presentation Assignment Presentation</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>Define the consumer market and construct a simple model of consumer buyer behavior.</li> <li>Identify the major factors that influence consumer buyer behavior.</li> <li>Explain the buying decision process.</li> <li>Narrate the adaption and diffusion process for a new product.</li> </ul>	<p><b>Customer Market and Customer Buyer Behavior:</b> Models of consumer behavior, characteristics affecting consumer behavior, types of buying decision behavior, the buyer decision process, the buyer decision process for new products.</p>	<p>Lecture Interactive discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>Define product and the major classifications of products and services.</li> <li>Describe the decisions companies make regarding their individual products and services, products lines and products mixes.</li> <li>Set a brand strategy.</li> <li>Identify the four characteristics that affect the marketing of a service and the additional marketing considerations that service requires.</li> <li>List and define the steps in the new product development process and major considerations in managing this process.</li> <li>Explain the stages of the product life cycle and how marketing</li> </ul>	<p><b>Product, Services and Brands:</b> Basic concept, classification, characteristics &amp; marketing considerations of different types of consumer goods, industrial goods &amp; services, new product development and product life cycle strategies, managing new product development product line simplification, diversification.</p>	<p>Lecture Interactive discussion Visual presentation Assignment Presentation</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

strategies change during the product's life cycle.			
<ul style="list-style-type: none"> <li>• Define price and its importance.</li> <li>• Identify the external and internal considerations that affecting pricing decisions.</li> <li>• Explain the new product pricing, product mix pricing and price adjustment strategies.</li> <li>• Analyze the key issues related to initiating and responding to price changes.</li> </ul>	<b>Pricing and Pricing Strategies:</b> Price, importance, objectives, influencing factors for price determination, pricing methods, price policy & strategies, price adjustment strategies.	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Describe the nature of marketing channels, designs, management decisions and pattern of physical distribution or logistics.</li> <li>• Explain how companies select, motivate and evaluate channel members.</li> <li>• Identify the major channel alternatives open to a company.</li> <li>• Analyze the nature and importance of marketing logistics and integrated supply chain management.</li> </ul>	<b>Marketing Channels:</b> Types & functions of channels, utility of channel, channel objectives & options, selection of channel of distribution, channel design decisions, channel management decisions, marketing logistics and supply chain management.	Lecture, Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Describe promotion mix tools for communicating customer value.</li> <li>• Outline the communications process and the steps in developing effective marketing communications.</li> <li>• Develop the promotional budget.</li> <li>• Explain the role of advertising in the promotion mix.</li> <li>• Discuss how companies use public relations to communicate with their publics.</li> </ul>	<b>Communicating Customer Value:</b> Objectives & importance, promotional tools, promotional mix, promotional budget, steps in effective marketing communication, socially responsible marketing communication. <b>Advertising and Public Relations:</b> Advertising, advertising strategies, public relation and its role and impact.	Lecture Interactive discussion Visual presentation Assignment Presentation	Quiz/MCQ Short answer Essay type answer Report

**Reference Books**

1. Assael, H., Reed, P. and Patton, M., (1995). Marketing: Principles and Strategy. Harcourt-Brace, Sydney, Australia.
2. Jobber, D. and Chadwick, F. E., (2012). Principles and Practice of Marketing. McGraw-Hill Inc., USA.
3. Kotler, P. and Armstrong, G., (2011). Principles of Marketing. Pearson Education, Inc., New Jersey, USA.

<b>Course Code: AGBM 275</b> <b>Course Title: Agricultural Marketing (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 2</b>	<b>Semester: II</b>
<b>Rationale:</b> This course designed to give a foundation about agricultural marketing concepts and highlights the major marketing problems of agricultural products.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire knowledge about fundamental concepts of agricultural marketing</li> <li>• Enrich knowledge on transportation, grading, standardization and market information</li> <li>• Implement knowledge about agricultural cooperatives in Bangladesh</li> <li>• Introduce the various elements of marketing cost, marketing margin and marketing efficiency.</li> <li>• Gather knowledge about new product development</li> <li>• Articulate knowledge about the characteristics of agricultural marketing and suggestion to improve the situation of agricultural marketing in Bangladesh</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define markets, marketing and agricultural marketing</li> <li>• Explain the importance of agricultural marketing</li> <li>• Discuss the commandments of scientific marketing</li> </ul>	Definition of markets, essential components of a market, definition of marketing and agricultural marketing, different groups involved in marketing, is marketing productive? importance of agricultural marketing in the economic development, difference in marketing of agricultural and manufactured goods, different marketing concept, marketing system and its components, commandments of scientific marketing, approaches to the study of marketing	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Discuss the importance of transportation</li> <li>• Describe the factors affecting the cost of transportation</li> <li>• Explain the meaning of grading and standardization</li> <li>• Discuss the meaning and risks of storage</li> <li>• Describe the cost and returns of storage</li> </ul>	Importance of transportation in marketing of farm products, different means of transportation, factors affecting the cost of transportation, suggestions for improvement of transportation, meaning of grading and standardization, basis of standards, criteria for grades and standards, importance of grading, meaning of storage, importance of storage, risks in storage, different storage mode, cost and returns of	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report

	storage, Bangladesh scenario in storage		
<ul style="list-style-type: none"> <li>Define marketing information</li> <li>Discuss the roles of market information</li> <li>Explain different criteria for good market information</li> <li>Narrate criticisms of market information</li> </ul>	meaning of marketing information, roles of market information, types of market information, criteria for good market information, collection and dissemination of market information, criticisms of market information	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Define the meaning of cooperative marketing</li> <li>Explain the objectives of cooperative marketing</li> <li>Illustrate the rational of cooperative marketing for Bangladesh</li> </ul>	Meaning of cooperative marketing, cooperative marketing in Bangladesh, objective of the cooperative marketing, do you suggest cooperative marketing for the farmers of Bangladesh?	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Define marketing cost</li> <li>Classify marketing cost</li> <li>Discuss components of marketing cost</li> <li>Define marketing margin</li> <li>Describe the components of marketing margin</li> <li>Explain the concept producers share in consumer's taka</li> </ul>	Meaning of marketing cost, classification of marketing cost, components of marketing cost of agricultural commodities, factors affecting the cost of marketing, definition of marketing margin, components of marketing margin, misconception about marketing margin, measuring marketing margin, importance and factors affecting marketing margin, producers share in consumer's taka	Lecture Interactive discussion Visual presentation Assignment	Quiz/McQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Define marketing efficiency</li> <li>Explain marketing channel and value chain</li> <li>Discuss the factors governing choice of channel</li> <li>Narrate the importance of marketing channel</li> </ul>	Meaning of marketing efficiency, approach to the assessment of marketing efficiency, reasons for study marketing efficiency, marketing channel and value chain of agricultural commodities like crop, vegetables, meat, fish, milk and broiler, factors governing choice of channels, several ways of a trade channel disruption, importance of marketing channel	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/McQ Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Define market integration and marketing mix</li> <li>• Illustrate product classification and new product development</li> <li>• Discuss the characteristics of agricultural marketing in Bangladesh</li> <li>• Compare different agricultural product marketing companies in Bangladesh</li> </ul>	Meaning and types of market integration, definition of marketing mix, major tools and instruments of marketing mix, product classification and new product development, agricultural marketing in Bangladesh, characteristics of agricultural marketing in Bangladesh, suggestion to improve the situation, studying different agricultural companies in Bangladesh and abroad. study tour to visit different companies	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Gather real life experiences related to agricultural marketing</li> </ul>	Field trip	Assignment	Report
<p><b>Reference Books</b></p> <ol style="list-style-type: none"> <li>1. Acharya, S.S. and Agarwal, N.L., 1999. Agricultural Marketing in India. 3<sup>rd</sup>Edn. Oxford &amp; IBH Pub. Co., Delhi.</li> <li>2. Chhina, S.S.. 2002. Agricultural Marketing and Indian Agricultural Marketing. 1<sup>st</sup>Edn. Kalyani Pub., New Delhi.</li> </ol>			

<b>Course Code: AGBM 325</b> <b>Course Title: Business Ethics and Corporate Social Responsibilities (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 3</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide knowledge on business ethics and corporate social responsibilities that will help to develop a good corporate citizen image. Without any knowledge about the business ethics, it will be very difficult to take all decisions related to business ethically.			
<b>Course Learning Outcomes :</b> <ul style="list-style-type: none"> <li>• Define business ethics and examine its importance.</li> <li>• Detect some of the ethical issues that may arise in business.</li> <li>• Specify how businesses can promote ethical behavior.</li> <li>• Define social responsibility and explain its relevance to business.</li> <li>• Debate on organization’s social responsibilities to owners, employees, consumers, the environment, and the community.</li> <li>• Evaluate ethical consideration of business decision.</li> <li>• Evaluate organization’s policy on discrimination and harassment.</li> <li>• Create a social responsibility policy for organization.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Discuss the meaning, nature and objective of ethics and business ethics</li> <li>• Identify the needs for business ethics.</li> <li>• Explain the significance of business ethics in 21st century scenario.</li> <li>• Analyze the factors causing unethical behavior in organizations.</li> <li>• Evaluate how value maximization in an organization get affects by ethics.</li> </ul>	<b>Ethics and Business Ethics:</b> Introduction, meaning and definition of ethics, nature and objective of ethics, ethics and related terms, meaning of business ethics, need and objective of business ethics, significance of business ethics, ethical dimensions, factors causing unethical behavior, important factors of building an ethical infrastructure. <b>Values and Ethics:</b> Characteristics of values, value formation in society, types of values, ethical value system, ethics and value maximization.	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Discuss the elements necessary to develop ethical corporate behavior.</li> <li>• Explain the essential steps to establish ethical in organization</li> </ul>	<b>Development of Ethical Corporate Behavior:</b> Factors affecting managerial work, elements necessary for ethical	Lecture Interactive discussion Visual presentation	Quiz/MCQ Short answer Essay type answer



<p>provided by ethical leaders.</p> <ul style="list-style-type: none"> <li>Define ethical leader.</li> </ul>	<p>corporate behavior.</p> <p><b>Ethical Leadership:</b> Leadership-ethics and values, significance of ethical leadership, establish an ethical framework.</p>	<p>Assignment</p>	<p>Report</p>
<ul style="list-style-type: none"> <li>Discuss the ethical decision-making process with suitable examples.</li> <li>Demonstrate Ethical problems do occur in businesses, explain reasons, sources and some guidelines to managers to make ethical decisions.</li> <li>Define ethical dilemma. Construct platinum standards of ethics.</li> </ul>	<p><b>Ethical Decision Making:</b> Ethical decisions (individual/community) in organization, structure of ethical decision making, how to use ethical reasoning, problems in ethical decision making, guidelines for managers for ethical decision making.</p> <p><b>Ethical Dilemmas in Organization:</b> Meaning and definitions, salient features of ethical dilemma, approaches and methods of resolving ethical dilemma, platinum standards of ethics.</p>	<p>Lecture Interactive discussion Visual presentation Case study</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>Define and explain the term corporate social responsibility.</li> <li>Explain the various social responsibility models.</li> <li>Identify the major areas in which a firm should be socially responsible</li> <li>Discuss the factors behind the origin of corporate governance.</li> <li>Determine the way to achieve good corporate governance.</li> </ul>	<p><b>Social Responsibility of Business:</b> Meaning and definition, why business should be socially responsible, social responsibilities models, main social responsibilities of business organization, corporate social responsibility and Bangladesh.</p> <p><b>Corporate Governance:</b> Historical background, factors behind the origin, important issues of corporate governance, corporate governance in Bangladesh professionalization of corporate governance, how to achieve good corporate governance.</p>	<p>Lecture Interactive discussion Visual presentation Case study Presentation</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

<ul style="list-style-type: none"> <li>• Define ethical product</li> <li>• Discuss the basic major reasons for which marketers follow marketing ethics</li> <li>• Explain the role of ethics in Training and development.</li> <li>• Set the ethical guidelines to help HR professionals in dealing with ethical issues of HRM.</li> </ul>	<p><b>Ethics in Marketing:</b> Common unethical practices, factors behind ethical practices, marketing ethics–important issues.</p> <p><b>Ethics in Finance:</b> Financial market, financial operation.</p> <p><b>Ethics in Human Resource Management:</b> Ethics in job design, ethics in human resource planning, ethics in recruitment and selection, ethics in training and development, ethics in career development, ethics in performance evaluation, ethics in wage and salary, administration, ethics in layoff</p>	<p>Lecture Visual presentation</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
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**Reference Books**

1. Sims, R. R. (2003). Ethics and corporate social responsibility: Why giants fall. New Haven: Praeger Publishers.
2. Khan, A. R.(2009). Business Ethics. Dhaka: Brothers Publications
3. Paliwal, M. (2006). Business ethics. New Delhi: New Age International.

<b>Course Code: AGBM 327</b> <b>Course Title: Supply Chain Management (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 3</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide knowledge on how logistical decisions impact the performance of the firm as well as the entire supply chain and will understand the link between supply chain structures and logistical capabilities in a firm or the entire supply chain.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Use supply chain methods to critically analyze information in new and unfamiliar circumstances to make appropriate decisions.</li> <li>• Explain professional ethical responsibilities for the management of global supply chains.</li> <li>• Interpret the requirements for effective change management in global supply chains.</li> <li>• Improve their leadership, interpersonal and self-development capabilities.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define supply chain management</li> <li>• Illustrate the objectives of supply chain</li> <li>• Explain the supply chain decisions</li> <li>• Analysis the process views of supply chain</li> </ul>	Historical perspective, business logistics, importance of supply chain, supply chain in firm, objectives of supply chain and its approach, importance of supply chain decisions, decision phases in a supply chain, examples of supply chain	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Explain clear picture on supply chain performance</li> <li>• State and illustrate supply chain drivers and metrics</li> </ul>	Competitive and supply chain strategies, achieving strategic fit, expanding strategic scope, obstacles to achieving strategic fit, drivers of supply chain performance, frameworks for structuring drivers, facilities, inventory, transportation, information, sourcing, pricing,	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Design the supply chain network</li> <li>• Design distribution networks and application to e-business chain</li> <li>• Illustrate on network design in the supply</li> <li>• Analyze global supply chain network</li> </ul>	Role of distribution in the supply chain, factors influencing distribution network design, design options for a distribution network, e-business and distribution network, network design in supply chain, factors affecting	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report

	network design, role of IT in network design, impact of globalization on supply chain network, risk management in global supply chain.		
<ul style="list-style-type: none"> <li>• Make a plan demand and supply in a supply chain</li> <li>• Discuss on demand forecasting in a supply chain</li> <li>• Aggregate planning in a supply chain</li> </ul>	Role of forecasting in a supply chain, forecasting characteristics, components of forecasting, time series forecasting method, role of IT in forecasting method, aggregate planning in supply chain, aggregate planning problem in supply chain, inventory planning and economic theory aberrations, responding to predictable variability in the supply chain, managing supply and demand.	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Discuss on planning and managing inventories in a supply chain</li> <li>• Analyze and illustrate on managing economics of scale in a supply chain cycle inventory</li> <li>• Compute and illustrate on managing uncertainty in a supply chain: safety inventory</li> <li>• Determine of optimal level of product availability</li> </ul>	Role of cycle inventory in a supply chain, estimating cycle inventory related costs in practice, role of safety inventory in supply chain, determining appropriate level of safety inventory, impact of aggregation on safety inventory, impact of replenishment policy on safety inventory, importance of the level of product availability, factor affecting optimal level of product availability, setting product availability for multiple products under capacity constraints.	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Design and plan for transportation network</li> <li>• Discuss on transportation importance in supply chain</li> <li>• Illustrate trade-offs in transportation design</li> </ul>	Role of transportation in supply chain, modes of transportation, design options for a transportation network, trade-offs in transportation design, tailored transportation, role	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Depict the role of IT in transportation</li> <li>• Discuss the risk management in transportation</li> </ul>	of IT in transportation, risk management in transportation.		
<ul style="list-style-type: none"> <li>• Manage cross-functional drivers in a supply chain</li> <li>• Discuss on sourcing decisions in a supply chain</li> <li>• Demonstrate pricing and revenue management in a supply chain</li> <li>• Describe the role of information technology in a supply chain</li> <li>• Coordinate in a supply chain network</li> </ul>	Role of sourcing in a supply chain, in-house or outhouse, third and fourth-party logistics providers, supply scoring and assessment, procurement process, pricing and revenue management in multiple customer segments, pricing and revenue management for perishable assets, pricing and revenue management for seasonal demand, future IT in supply chain, risk management in IT, achieving coordination in practice, coordination in supply chain.	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Gather knowledge on real life experiences to supply chain management</li> </ul>	Field trip	Assignment	Report

**Reference Books**

1. Chopra. S., Meind. P., and Kalra. D.V. (2016). Supply Chain Management, strategy, planning and operation. 6<sup>th</sup> edition. Pearson Publication.
2. Hugos. H. M. (2003). Essentials of Supply Chain Management. 2<sup>nd</sup> edition. Wiley Publication.
3. David. S.L., Philip. K., and Edith. S.L. (2008). Designing and Managing the Supply Chain. 3<sup>rd</sup> edition. Pearson Publication.
4. Rushton, A. (2000).The Handbook of Logistics and Distribution Management: Understanding the Supply Chain. 2<sup>nd</sup> edition. KogarPage Publication.
5. Jacobs, F. R.,BerryW.L.,Whybark, D.C., and Vollmann,T.E. (2011). Manufacturing Planning and Control for Supply Chain Management. 3<sup>rd</sup> edition. Wiley Publication.

<b>Course Code: AGBM 329</b> <b>Course Title: E-Business (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 3</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide knowledge on e-commerce practices and policies as accessibility of internet to people has been increased dramatically.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire knowledge on fundamentals of E-business</li> <li>• Enrich knowledge about planning, organizing E-business models</li> <li>• Gain knowledge on doing online business</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define E-Commerce/ E-Business</li> <li>• Discuss different e-commerce platforms</li> <li>• Explain why do people go for online business</li> </ul>	<b>Introducing e-Business:</b> E-commerce, features of e-commerce technology, types of e-business, B2C, B2B, C2C, G2G, G2B, G2C, B2E, m-commerce, growth of e-commerce, e-commerce history, advantages and disadvantages of e-business.	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Design e-business models</li> <li>• Discuss how does internet and web change e-business strategy</li> </ul>	<b>E-commerce Business Models and Concepts:</b> Business model, key elements of business model, categorizing e-commerce business models, major B2B business models, business models in emerging e-commerce areas, internet and web that change business strategy, structure and process.	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Narrate online payment process</li> <li>• Explain security issues in e-payment</li> </ul>	<b>Online Security and Payment System:</b> E-cash, SMART card, e-wallet, debit card, credit card, card transaction process, credit card fraud/theft, spam web sites, hacking and cyber vandalism, unwanted program, sniffing, insider attacks.	Lecture Interactive discussion Visual presentation	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe online marketing strategies</li> <li>• Explain online consumer behavior and its model</li> </ul>	<b>E-Commerce Marketing Concepts:</b> Internet audience and consumer behavior, online consumer profile, online purchasing decision, model of online consumer behavior, customer relationship management	Lecture Interactive discussion Visual presentation	Quiz/MCQ Short answer Essay type answer Report

	(CRM) system, market entry strategies, advertising networks, permission marketing, affiliate marketing, viral marketing, blog marketing, social network marketing, net pricing strategies, channel strategies.		
<ul style="list-style-type: none"> <li>• Illustrate different online promotional tools</li> <li>• Explain ways of promoting in different online tools</li> <li>• Discuss challenges of e-communications</li> </ul>	<b>E-Commerce Marketing Communications:</b> Online advertising, online catalogs, understanding the costs and benefits of online marketing communications, website as a marketing communication tool. SEO (search engine optimization), social media, email marketing.	Lecture Interactive discussion Visual presentation	Quiz Short answer Essay type answer Report

**Reference Books**

1. Ryan, Damian and Jones Calvin, 2009. Understanding Digital Marketing. Kogan Page limited, London, UK.
2. Rayport, F. Jeffrey and Jaworski, j. Bernard, 2001. E-Commerce. McGraw-Hill, New York, USA

<b>Course Code: AGBM 375</b> <b>Course Title: Small and Medium Enterprise Development (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 3</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide fundamental concept on small and medium enterprise development and prospects of SME sectors in Bangladesh.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Acquire knowledge about fundamental concepts of small and medium enterprise development</li> <li>• Enrich knowledge about small business and key to success and failure of small business.</li> <li>• Gain knowledge about different successful entrepreneurs in Bangladesh</li> <li>• Gather knowledge about family business, customer relationship management, total quality management</li> <li>• Acquaint with different SME related organization in Bangladesh</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define entrepreneur and entrepreneurship</li> <li>• Discuss the characteristics, function and types of entrepreneurship</li> <li>• Describe the qualities of entrepreneurship</li> </ul>	Selected definitions of entrepreneur and entrepreneurship, characteristics of entrepreneurs, types of entrepreneurship, national benefits of entrepreneurship, functions of entrepreneurship, qualities of a successful entrepreneur, entrepreneur Vs manager characteristics	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Define small business</li> <li>• Classify small business</li> <li>• Discuss the role of small business</li> <li>• Narrate keys to success and failure of small business</li> <li>• Narrate the essentials of starting a small business</li> <li>• Discuss the physical facilities of small business</li> <li>• Explain the feasibility study checklist of small business</li> <li>• Describe the characteristics of good employees</li> </ul>	Selected definitions of small business, types of small business, structural features of small business, a comparison of three forms of business organization, role of small business in the socioeconomic development, keys to success & factors responsible for failure of small business, reasons for and against starting a new small business, essentials of starting a small business, selecting a location for small business, providing physical facilities for small business, major legal concepts and entrepreneurial ventures. feasibility study checklist of small business and	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report



	factors required for starting a business, Managing small business, Good employees are valuable assets, Human involvement in different stages of small business		
<ul style="list-style-type: none"> <li>• Discuss the principles of organizing</li> <li>• Explain the expected attributes and traits of a successful small business manager</li> <li>• Explain the areas of personnel management</li> <li>• Describe human resources and personnel policy</li> <li>• Discuss the rules of conduct and standards of performance of small business</li> </ul>	The principles of organizing and small business success, management functions and their applicability, expected attributes & traits of a successful small business manager, causes of failure as a small business manager, areas of personnel management for small business, human resources and personnel policy suggestions for small business, finding right man for the right position for small business, rules of conduct and standards of performance to maintain discipline	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Narrate the lives of successful entrepreneurs</li> </ul>	<b>Lives of Successful Entrepreneurs:</b> Mr. Mozammel Hoque, Mr. Absul Khaleque pathan, Mr. Jahurul Islam, Hazi Mohemmad Jonab Ali, Mr. Abul Kasem Haider, Mr. Abul Kashem Khan, Mrs. Anwara Begum, Mr. Sheikh Akijuddin	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Describe the responsibilities and rights of family shareholders business</li> <li>• Explain the pitfalls of the family business</li> <li>• Discuss the strategies for improving the capability of a family business</li> <li>• Illustrate family business plan</li> </ul>	Responsibilities and rights of family shareholders of a family business, succession in family business, pitfalls of the family business, strategies for improving the capability of a family business, improving family business performance, how to overcome nepotism in family business, management development plan in family business, family reunion games promote family values, how to save the family business?	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>Define customer relationship management, total quality management</li> <li>Discuss current scenario of SME sector in Bangladesh</li> </ul>	customer relationship management, total quality management (TQM),current scenario of SME sector in Bangladesh,	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Discuss different SME related organization in Bangladesh</li> </ul>	Information about different organization: SME foundation, BSCIC, SCITI	Lecture Interactive discussion Visual presentation Assignment Case study	Quiz/MCQ Short answer Essay type answer Report

**Reference Books**

1. A. R. Khan. 2009. Entrepreneurship, Small Business and Lives of Successful Entrepreneurs. 2<sup>nd</sup> Edn. Bondhu Printing Press, Dhaka.
2. P. M. Charantimath. 2009. Entrepreneurship Development Small Business Enterprises. 5<sup>th</sup> Edn. Pearson Pub., Delhi, India.
3. S.S. Khanka. 2006. Entrepreneurial Development. 1<sup>st</sup> Edn. S. Chand Pub., New Delhi, India.

<b>Course Code: AGBM 376</b> <b>Course Title: Small and Medium Enterprise Development (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 3</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide practical knowledge on SME sectors in Bangladesh.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire knowledge on constructing small and medium business plan</li> <li>• Enrich knowledge on lives of successful entrepreneurs in Bangladesh</li> <li>• Develop knowledge about different successful small and medium enterprise in Bangladesh</li> <li>• Gather knowledge on different market oriented strategies of SME.</li> <li>• Acquaint with different organizations/ bodies that facilitate SME in Bangladesh.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define business plan</li> <li>• Discuss business plan</li> </ul>	<b>Small and Medium Enterprise Business Plan:</b> In this practical, student will develop small and medium business plan independently.	Lecture Interactive discussion Visual presentation Assignment Case study	Short answer Report
<ul style="list-style-type: none"> <li>• Discuss different entrepreneurs lives</li> </ul>	<b>Lives of Successful Entrepreneurs:</b> Student will study different cases. They get practical experience about the lives of successful entrepreneurs. They will learn about the life history of successful entrepreneurs and gather experience from the lives of successful entrepreneurs	Lecture Interactive discussion Visual presentation Assignment	Short answer Report
<ul style="list-style-type: none"> <li>• Narrate different SME related organization and their activities</li> </ul>	<b>Study Tour:</b> Student will visit different SME related organization and get practical experience	Assignment	Report
<ul style="list-style-type: none"> <li>• Discuss different small and medium enterprise activities and operation</li> </ul>	<b>Study tour</b> Student will visit different small and medium enterprise	Assignment	Report
<ul style="list-style-type: none"> <li>• Demonstrate activities of organizations that assist SMEs.</li> </ul>	Policies, strategies and controlling of organizations/ bodies on SMEs.	Lecture Assignment	Interview
<ul style="list-style-type: none"> <li>• Explain credit policy</li> </ul>	Banks credit policy on SME, Govt.	Lecture	Short

and way of securing funds	directives on SME, overcoming challenges of securing SME funds.	Assignment	question Interview
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**Reference Books**

1. A. R. Khan. 2009. Entrepreneurship, Small Business and Lives of Successful Entrepreneurs. 2<sup>nd</sup> Edn. Bondhu Printing Press, Dhaka.
2. P. M. Charantimath. 2009. Entrepreneurship Development Small Business Enterprises. 5<sup>th</sup> Edn. Pearson Pub., Delhi, India.
3. S.S. Khanka. 2006. Entrepreneurial Development. 1<sup>st</sup> Edn. S. Chand Pub., New Delhi, India

<b>Course Code: AGBM 425</b> <b>Course Title: International Business (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 4</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to help students to discover how they can make their market in the ever-changing global economic landscape.			
<b>Course Learning outcomes:</b> <ul style="list-style-type: none"> <li>• Carry out a detailed literature search of international business administration using relevant bibliographical resources from print and online resources.</li> <li>• Discuss current conceptual and theoretical models, issues, and concerns in international business administration.</li> <li>• Describe current practices, issues, and concerns in international business administration.</li> <li>• Apply current business practices to the management of international businesses.</li> <li>• Summarize significant differences in business practices in different parts of the world and understand how these differences affect managing companies in various countries.</li> <li>• Evaluate and critique business practices in various countries throughout the world to determine the better practices in these countries and how they can be applied to other countries.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define globalization and international business and show how they affect each other</li> <li>• Describe the companies engagement in international business and why international business growth has accelerated</li> <li>• Discuss globalization’s future and the major criticisms of globalization</li> <li>• Apply social science disciplines to understanding the differences between international and domestic business.</li> </ul>	<b>Background for International Business:</b> International business, globalization, modes of operation of international business, what are the differences from domestic business.	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>Analyze the major causes of cultural differences and changes.</li> <li>Set cultural guidelines for companies that operate Internationally</li> <li>Profile trends in the emergence and diffusion of political systems</li> <li>Identify the idea of political risk and approaches to managing it</li> <li>State the trends in the evolution and diffusion of legal systems</li> <li>Examine the major legal issues facing international business companies.</li> <li>Discuss the ideas of economic freedom.</li> <li>Compare and contrast macroeconomic indicators.</li> </ul>	<p><b>Comparative Environmental Frameworks:</b> The cultural environment facing business, cultural awareness, delineating cultures, behavioral practices affecting business, dealing with cultural differences.</p> <p><b>The Political, Legal and Economic Environments:</b> Political system, the legal environment, legal issues in international business, elements of economic environment, features of an economy, integrating economic analysis.</p>	<p>Lecture Interactive discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>Describe theories of why countries should trade</li> <li>Comprehend how global efficiency can be increased through free trade</li> <li>Identify factors affecting countries' trade patterns</li> <li>Evaluate the relationship between foreign trade and international factor mobility.</li> <li>Realize the rationales for government policies that enhance and restrict trade</li> <li>Interpret the effects of pressure groups on trade policies</li> <li>Discuss the static and dynamic impact of trade agreements on trade and investment flows.</li> </ul>	<p><b>International Trade and Factor Mobility Theory:</b> The interventionist theories, free trade theories, trade pattern theories, factor mobility theory.</p> <p><b>Governmental Influence on Trade:</b> Conflicting result of trade policies, rationales of governmental interventions, instruments of trade control, governmental trade influences.</p> <p><b>Cross National Co-Operation and Agreements:</b> WTO, major bilateral agreements, major regional trading groups, commodity agreements.</p>	<p>Lecture Interactive discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

<ul style="list-style-type: none"> <li>• Discuss the fundamentals of foreign exchange.</li> <li>• Explain the working process of foreign exchange market</li> <li>• Examine the different institutions that deal in foreign exchange.</li> <li>• Identify the major determinants of exchange rate.</li> <li>• Evaluate how exchange rate movements influence business decisions.</li> </ul>	<p><b>Global Foreign Exchange Markets:</b> Foreign exchange, major foreign exchange market, foreign exchange trading process.</p> <p><b>Determination of Exchange Rates:</b> International monetary fund, exchange rate arrangements, determining exchange rate, forecasting exchange rate movements.</p>	<p>Lecture Interactive discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Discuss the idea of industry structure, firm strategy, and value creation, export and import.</li> <li>• Describe the features and functions of the value chain framework.</li> <li>• Identify the dimensions that shape how managers develop strategy.</li> <li>• Analyze the methods and problems when collecting and comparing information internationally.</li> <li>• Compare direct and indirect selling of exporting.</li> <li>• Identify the elements of import and import strategies.</li> </ul>	<p><b>The Strategy of International Business:</b> Industry, strategy, the firm as value chain, global integration vs local responsiveness, types of strategy.</p> <p><b>Country Evaluation and Selection:</b> Scanning vs detail analysis, collecting and analyzing data, country comparison tools, allocating among locations.</p> <p><b>Export and Import Strategies:</b> Export strategy, import strategy, the import process, the export process, freight forwarders, and countertrade.</p>	<p>Lecture Interactive discussion Visual presentation Assignment</p>	<p>Quiz Short answer Essay type answer Report</p>
<p><b>Reference Books</b></p> <ol style="list-style-type: none"> <li>1. Daniels, J.D., Radebaugh, L.H, Sullivan, D.P., (2015). International Business Environments <i>and</i> Operations. Fifteenth Edition. Pearson Education, Inc, Upper Saddle River, New Jersey, USA.</li> <li>2. Geringer, J.M, Minor, M.S., and McNett, J.M., (2008). International business: the challenge of global competition. 11th edition. McGraw Hill Irwin, New York, USA.</li> <li>3. Hill, C. W. L. (2005). International business: Competing in the global marketplace. 6th edition. McGraw-Hill/Irwin, Boston, USA.</li> </ol>			

<b>Course Code: AGBM 475</b> <b>Course Title: Agribusiness Management (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 4</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide knowledge on agribusiness performance, business management, market foundations and applications, agribusiness sectors and product marketing.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Calculate the costs of production and use the fixed/variable concepts in making business decisions.</li> <li>• Determine the different cost involved in agribusiness alternatives.</li> <li>• Explain the financial management for agribusiness</li> <li>• Demonstrate the input sectors in Bangladesh.</li> <li>• Determine the output and value added sectors in Bangladesh economy.</li> <li>• Identify appropriate goal-setting activities that could be used for a farm business.</li> <li>• Describe Integrated market development approach (IMD) in agribusiness sector.</li> <li>• Show the role of niche marketing and product development, product marketing in agribusiness sector.</li> <li>• Identify how to obtain product, company, and industry knowledge and use it in a sales presentation.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Discuss on agribusiness,</li> <li>• Illustrate global agrifood system and</li> <li>• Describe the roles and actions of agribusiness manager.</li> </ul>	Introduction to the business of agriculture, global agri-food system, agribusiness manager	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Discuss on planning function</li> <li>• Discuss on role of marketing, customer demand</li> <li>• Illustrate and analysis market competition</li> </ul>	The planning function, role of marketing, marketing management, understanding consumer demand, Staying competitive.	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Discuss on organizing functions and legal structure</li> <li>• Explain organizational controlling process</li> <li>• Discuss on production and inventory management</li> <li>• Describe basic accounting documents and using accounting information for business control and planning</li> </ul>	The organizing function, organizing for success, choosing a legal structure, controlling process, organizing production using economic principles, production and inventory management, basic accounting documents, using accounting information for business control and	Lecture Interactive discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report



	planning		
<ul style="list-style-type: none"> <li>• Discuss on financial management for agribusiness</li> <li>• Discuss the reasons an agribusiness may choose to increase its financial resources</li> <li>• Describe the alternative types of capital available to the agribusiness</li> <li>• Explain how specific variables impact the annual percentage rate (APR) paid on a loan</li> <li>• State the usefulness of the cash budget in making loan requests</li> <li>• Learn and apply the steps for developing budgets</li> <li>• Understand qualitative and quantitative techniques for developing forecasts and budgets</li> <li>• Determine the usefulness of pro forma financial statements in financial planning</li> </ul>	<p>financial management, reasons an agribusiness may choose to increase its financial resources, alternative types of capital available to the agribusiness, various types of loans available, relationship between the agribusiness firm's tax rate and APR, steps for developing budgets, forecasts and budgets,</p>	<p>Lecture Interactive discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Discuss the Seed sector in Bangladesh</li> <li>• Describe the History and development of seed trade in Bangladesh,</li> <li>• Discuss on Key players in the seed sector – public and private</li> <li>• Explain different Seed regulatory framework</li> </ul>	<p>Input sector, seed sector in Bangladesh, seed management scenario in Bangladesh, history and development of seed trade in Bangladesh, key players in the seed sector – public and private, supply of seeds from the public sector, Bangladesh Rice Research Institute (BRRI), NGO and private sector, seed market led by private firms, BRAC Seed and agro enterprise, seed regulatory framework, challenges confronting seed sector development,</p>	<p>Lecture Interactive discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Discuss the fertilizer production and factories in Bangladesh</li> <li>• Illustrate management problems</li> <li>• Narrate the importance</li> </ul>	<p>Status of fertilizer production and factories in Bangladesh, fertilizer and management problems, Common constraints to the fertilizer sector, fertilizer distribution</p>	<p>Lecture Interactive discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

<p>fertilizer distribution system in Bangladesh, Fertilizer Pricing and Subsidies</p> <ul style="list-style-type: none"> <li>• Illustrate different Regulations &amp; gaps identified relating to fertilizer marketing &amp; distribution</li> </ul>	<p>system in Bangladesh, fertilizer pricing and subsidies, monitoring and evaluation (M&amp;E) of fertilizer production, import and farm-level prices, fertilizer marketing and distribution, regulations &amp; gaps identified relating to fertilizer marketing &amp; distribution,</p>	<p>Case study</p>	
<ul style="list-style-type: none"> <li>• Demonstrate on pesticide marketing system in Bangladesh</li> <li>• Discuss the roles of different actors in pesticide marketing,</li> <li>• Illustrate the problems in pesticide marketing in Bangladesh.</li> </ul>	<p>Pesticide marketing in BD, marketing system, channel, actors, company, distributor, supplier, transportation system, management system, farmers, pesticide marketing and management problems in Bangladesh</p>	<p>Lecture Interactive discussion Visual presentation Assignment Case study</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Discussing on product development</li> <li>• Describe on product development stages</li> <li>• Illustrate on brand equity and outlines</li> <li>• Demonstrate on elements of brands to build brand equity</li> </ul>	<p>Product development, and branding, brand equity, brand equity outline, brand loyalty, brand awareness, brand associations, perceived quality, branding elements to build brand equity,</p>	<p>Lecture Interactive discussion Visual presentation Assignment Case study</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Discuss on niche marketing</li> <li>• Discuss on importance of niche marketing,</li> <li>• Identify and analysis steps of niche marketing</li> <li>• Discuss on factors affecting niche marketing</li> </ul>	<p>Niche marketing, importance of niche marketing in agribusiness development, economic developments, steps in niche marketing, thinking outside competitive boxes through niche marketing, possibilities in niche marketing in Bangladesh, factors affecting niche marketing.</p>	<p>Lecture Interactive discussion Visual presentation Assignment Case study</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Discuss on Value Chain Development</li> <li>• Analyze on drivers of value chain development</li> <li>• Discuss Terminology: Value Chains, Supply Chains and the</li> </ul>	<p>Value chain development, five drivers of value chain development, Putting value chains and drivers into a systemic and operational market system framework, Terminology: Value chains,</p>	<p>Lecture Interactive discussion Visual presentation Assignment Case study</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

<p>Market System</p> <ul style="list-style-type: none"> <li>• Demonstrate on value chain cycle</li> <li>• Illustrate on value chain mapping and research</li> <li>• Analyze the Examples of Indicators for Value Chain Development</li> </ul>	<p>supply chains and the market system, the value chain development cycle, five main steps of value chain development; Sector Selection, steps to select a sector, The rational for sector selection, market system analysis, value chain mapping, construction of a value chain map, value chain research, moving from symptoms to systemic constraints in a value chain, value chain analysis and intervention design, value chain development finding sustainable solutions with impact on a large scale, monitoring and results measurement, examples of indicators for value chain development.</p>		
<ul style="list-style-type: none"> <li>• Discuss the Inclusive market development</li> <li>• Implement and analyzing IMD on agribusiness sectors in Bangladesh</li> </ul>	<p>Inclusive market development and agribusiness sector in Bangladesh, fisheries, crops and vegetables, fruits and flower sector development through IMD</p>	<p>Lecture Interactive discussion Visual presentation Assignment Case study</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Operate management for agribusiness</li> <li>• Develop an understand operations management, including the definition, back-ground, and current issues in the area</li> <li>• Discuss some of the unique characteristics of agricultural commodities and products as they impact operations management and production planning</li> <li>• Summarize the key elements involved in plant and facility location decisions</li> </ul>	<p>Operations management, definition, back-ground, and current issues in the area, characteristics of agricultural commodities and products as they impact operations management and production planning, elements involved in plant and facility location decisions, factors to consider in determining the capacity of a plant or facility, process, product, hybrid, and fixed-position facility layouts, elements of job design.</p>	<p>Lecture Interactive discussion Visual presentation Assignment Case study</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

<ul style="list-style-type: none"> <li>• Identify some of the factors to consider in determining the capacity of a plant or facility</li> <li>• Differentiate between process, product, hybrid, and fixed-position facility layouts</li> <li>• Show the key elements of job design</li> </ul>			
<ul style="list-style-type: none"> <li>• Know about the concept of trade practices in Bangladesh</li> <li>• Identify the factors or causes of foreign trade</li> <li>• Know about the import and export policy of agricultural goods in Bangladesh</li> <li>• Discuss the import-export problems in Bangladesh</li> <li>• Identify the indenting business or importing house in Bangladesh</li> <li>• Find out the documents used in foreign/international business in Bangladesh</li> <li>• Identify the methods of quotation in international business</li> </ul>	<p>Concept of commercial policy of Bangladesh, common objectives of commercial policy in Bangladesh, concept of foreign trade, factors or causes of foreign trade in Bangladesh, characteristics of foreign trade of Bangladesh, import trade and procedure of import trade, goals and objectives of import trade in Bangladesh, problems of import trade in Bangladesh, export trade and export procedure of agricultural products, re-export, documents used in agricultural foreign trade, methods of quotation in foreign trade.</p>	<p>Lecture Interactive discussion Visual presentation Assignment Case study</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Gather real life experiences related to agribusiness management</li> </ul>	<p>Field trip</p>	<p>Assignment</p>	<p>Report</p>
<p><b>Reference Books</b></p> <ol style="list-style-type: none"> <li>1. F., Akridge, J., Dooley, F., and Foltz, J. (2000). Agribusiness Management. 4<sup>th</sup> edition. Waveland Publisher.</li> <li>2. Beierlein, J.G., (2008). Principles of agribusiness management. 4th edition. Waveland Publisher</li> <li>3. Nutz, N., and Sievers, M.A. (2010). Rough guide to value chain development, how to create employment and improve working conditions in targeted sectors, 1<sup>st</sup> edition. ILO publication.</li> </ol>			

# Department of Agricultural Statistics

## Course Layout

### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	AGST 175: Descriptive Statistics (Theory)	3	1	II
2.	AGST 176: Descriptive Statistics (Practical)	1	1	II
3.	AGST 225: Inferential Statistics (Theory)	3	2	I
4.	AGST 226: Inferential Statistics (Practical)	1	2	I
5.	AGST 275: Application of Statistical Packages in Social Sciences (Theory)	2	2	II
6.	AGST 276: Application of Statistical Packages in Social Sciences (Practical)	1	2	II
7.	AGST 425: Regression Analysis (Theory)	3	4	I
8.	AGST 426: Regression Analysis (Practical)	1	4	I
9.	AGST 475: Research Methodology (Theory)	2	4	II
10.	AGST 476: Research Methodology (Practical)	1	4	II
	Theory	13		
	Practical	5		
	<b>Total</b>	<b>18</b>		

<b>Course Code: AGST 175</b> <b>Course Title: Descriptive Statistics (Theory)</b>	<b>Credit Hours: 3</b>	<b>Level: 1</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is designed to develop students' knowledge about basic statistical methods. The course introduces descriptive statistics, correlation and regression analysis, probability theory, time series and forecasting, index number, interpolation and extrapolation.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire knowledge on the concepts of statistical methods and statistical inference that would help them in understanding the importance of statistics.</li> <li>• Enrich knowledge on the concepts involved in data presentation, analysis, interpretation and drawing inference.</li> <li>• Develop knowledge about probability theory, bivariate distribution, time series and forecasting, index number, interpolation and extrapolation.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Construct frequency distribution table.</li> <li>• Interpret graphical methods for summarizing data.</li> </ul>	<b>Statistics:</b> Definition, scope & limitations, variables and attributes, population and sample, frequency distributions, graphical representations of data.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Calculate measures of central tendency.</li> <li>• Explain the measures of central tendency.</li> </ul>	<b>Measures of Location:</b> Mean, median, mode and quantiles. Important properties and uses of averages.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Calculate measures of variability</li> <li>• Interpret summary statistics for summarizing data sets of measures of dispersion.</li> </ul>	<b>Measures of Variability:</b> Absolute and relative measures of variability. Important properties and uses of measures of dispersion.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Explain lack of symmetry of distribution.</li> <li>• Quantify the shape of the distribution.</li> </ul>	<b>Shape Characteristics of Curves:</b> Characteristics and uses of skewness and kurtosis.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Demonstrate an understanding of the basic concepts of probability.</li> <li>• Explain and apply the laws of probability.</li> <li>• Apply the Bayes' theorem in the field of agricultural economics.</li> </ul>	<b>Probability Theory:</b> Terminologies of probability, Laws of probability. Bayes' theorem.	Lecture Discussion Visual Presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Recognize and interpret probability distributions and their properties.</li> <li>• Apply the normal curve in agribusiness fields.</li> </ul>	<b>Probability Distributions:</b> Binomial, Poisson and normal distributions. Properties and uses of distributions.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Identify a possible relationship between two continuous variables from a scatter plot.</li> <li>• Explain and interpret correlation coefficient.</li> <li>• Estimate linear regression line by OLS method and interpret.</li> </ul>	<b>Relationship between variables:</b> Bivariate distribution, scatter diagram, correlation and regression analysis. Method of least squares. Properties of correlation and regression coefficients.		
<ul style="list-style-type: none"> <li>• Identify a possible relationship between two continuous variables from a scatter plot.</li> <li>• Explain and interpret correlation coefficient.</li> <li>• Demonstrate partial and multiple correlation.</li> </ul>	<b>Correlation Analysis:</b> Concepts of bivariate data and scatter diagram. Types of correlation. Correlation Coefficients: Pearson, Kendall, Spearman. Assumptions, properties, applications and limitations of correlation coefficient. Concepts, properties, uses, applications and limitations of multiple and partial correlation coefficient. Concepts of simple regression.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Demonstrate an understanding of the time series data.</li> <li>• Identify trends and seasonal variations in time series data.</li> </ul>	<b>Time series:</b> Concepts, components, uses and methods of time series.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Forecast the time series data.</li> <li>• Improve business forecast with better statistical models based on statistical analysis.</li> </ul>	<p><b>Forecasting:</b> Forecasting model, uses and limitations of forecasting.</p>	<p>Lecture Discussion Visual presentation Problems solving</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Demonstrate knowledge and understanding of index numbers</li> <li>• Select appropriate methods for use in constructing index number.</li> <li>• Construct index number and assess critically its uses.</li> </ul>	<p><b>Index Number:</b> Concepts, methods of construction of index numbers. Criterion, properties, importance, uses, limitations and test of index number.</p>	<p>Lecture Discussion Visual presentation Problems solving</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Calculate and interpret the interpolation and extrapolation method.</li> <li>• Compare the results of interpolation and extrapolation.</li> </ul>	<p><b>Interpolation and Extrapolation:</b> Concepts, importance, applications and limitations of Newton's forward and backward interpolation formulas. Methods of extrapolation: Newtons and Bessels. Importance and limitations.</p>	<p>Lecture Discussion Visual presentation Problems solving</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

**Reference Books**

1. M. N. Islam. (2004). An Introduction to Statistics and Probability, Book World, Dhaka, Bangladesh.
2. A. R. Ahmed, M. A. A. Bhuiya, Z. A. Reza, M. Z. Hossain. (2015). Methods of Statistics, Rafia Publications, Seventh Edition, Dhaka, Bangladesh.
3. S. S. Sastry. (2007). Introductory Methods of Numerical Analysis, Fourth Edition, Dhaka, Bangladesh.
4. G.H. Goulden.(1952). Methods of Statistical Analysis, John Wiley, New York.
5. S.C. Gupta & V.K. Kapoor.(1982). Fundamentals of Mathematical Statistics, S. Chand and Company Ltd, Ramnagar, New Delhi.
6. J.N. Kapur& H. Sexena.(1976). Mathematical Statistics, S. Chand & Company Ltd., Ramnagar, New Delhi.
7. R.N. Shil and S.C. Debnath.(1992). An Introduction to the Theory of statistics, MinatiShil and Amita, Debnath, Mymensingh.
8. S.C Gupta, and V.K. Kapoor. (1988). Fundamentals of applied statistics, Chand and Com. New Delhi.



<b>Course Code: AGST 176</b> <b>Course Title: Descriptive Statistics (Practical)</b>	<b>Credit Hours: 1</b>	<b>Level: 1</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to develop students' knowledge through hands on exercise about statistical methods used in different areas of agricultural economics.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire skills in various statistical methods and their applications in agricultural economical fields.</li> <li>• Conduct the statistical methods to solve problems on descriptive statistics in agricultural economics.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Construct frequency distribution.</li> <li>• Interpret frequency distributions for summarizing data.</li> <li>• Demonstrate graphical methods for summarizing.</li> </ul>	Construction of frequency distribution, graphical representation.	Lecture Multimedia presentation Group discussions Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Calculate measures of locations.</li> <li>• Interpret summary statistics for typical data.</li> </ul>	Calculation of the different measures of locations	Lecture Multimedia presentation Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Calculate measures of variability.</li> <li>• Assess appropriate methods for summarizing a data set.</li> <li>• Recognize and interpret the shape characteristic of the distribution.</li> </ul>	Computation of the different measures of variability along with shape characteristics	Lecture Multimedia presentation Group discussions Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Draw and interpret scatter diagram for bivariate data.</li> <li>• Calculate and illustrate the linear relationship of variables</li> </ul>	Estimation of correlation and regression coefficients.	Lecture Multimedia presentation Group discussions Practice problem solving	Problem solving Viva-voce Practical notebook

<ul style="list-style-type: none"> <li>• Compute probabilities for binomial and Poisson distributions.</li> <li>• Explain the difference between the binomial and Poisson distributions.</li> </ul>	Fitting of probability distributions (Binomial and Poisson)	Lecture Multimedia presentation Group discussions Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Measure trends and seasonal variation.</li> <li>• Forecast time series data.</li> </ul>	Measurement of trend and seasonal variations by different methods.	Lecture Multimedia presentation Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Construct price and quantity index numbers for given data.</li> <li>• Test of index numbers and interpret the results.</li> </ul>	Construction of price and quantity index numbers by different formula with comparison and interpretation. Test of index numbers. Construction of consumer price index number.	Lecture Multimedia presentation Group discussions Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Perform interpolation and extrapolation method for given example.</li> <li>• Select appropriate method and interpret.</li> </ul>	Numerical solution using Newton's forward and backward interpolation formulas.	Lecture Multimedia presentation Group discussions Practice the problem solving	Problem solving Viva-voce Practical notebook

### Reference Books

1. M. N. Islam. (2004). An Introduction to Statistics and Probability, Book World, Dhaka, Bangladesh.
2. A. R. Ahmed, M. A. A. Bhuiya, Z. A. Reza, M. Z. Hossain. (2015). Methods of Statistics, Rafia Publications, Seventh Edition, Dhaka, Bangladesh.
3. S. S. Sastry. (2007). Introductory Methods of Numerical Analysis, Fourth Edition, Dhaka, Bangladesh.
4. G.H. Goulden. (1952). Methods of Statistical Analysis, John Wiley, New York.
5. S.C. Gupta & V.K. Kapoor. (1982). Fundamentals of Mathematical Statistics, S. Chand and Company Ltd, Ramnagar, New Delhi.
6. S.C Gupta, and V.K. Kapoor. (1988). Fundamentals of applied statistics, Chand and Com. New Delhi.
7. G.U. Yule & M. G. Kendall. 1965. An introduction to the Theory of Statistics, Charles Griffin, London.
8. R.G. D. Steel and J.H. Torrie. 1960. Principles and Procedures of Statistics. McGraw -Hill INc. New York.

<b>Course Code: AGST 225</b> <b>Course Title: Inferential Statistics (Theory)</b>	<b>Credit Hours: 3</b>	<b>Level: 2</b>	<b>Semester: I</b>
<b>Rationale:</b> The course is designed to develop students' knowledge about inferential statistical. The course introduces sampling distribution, estimation, method of estimation, interval estimation, test of hypothesis, parametric test, analysis of categorical data, non-parametric test and analysis of variance.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire knowledge on the concepts of statistical inference that would help them in understanding the importance of statistics.</li> <li>• Enrich knowledge on the concepts involved in parameter estimation, test of hypothesis.</li> <li>• Obtain knowledge about parametric and non-parametric test as well as analysis of variance.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Perceive of statistical inference.</li> <li>• Demonstrate parametric and nonparametric inference.</li> </ul>	<b>Introduction:</b> Concepts of statistical inference, parametric and nonparametric inference, jargons of statistical inference.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Study the small sampling distributions.</li> <li>• Select appropriate sampling distribution for given data.</li> </ul>	<b>Sampling Distribution:</b> Distribution of sample statistics, study of $\chi^2$ , t and F distribution and their properties, uses and applications.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Illustrate estimate, estimator and estimation.</li> <li>• Describe the characteristics of a good estimator.</li> <li>• Apply the methods of minimum variance unbiased estimator.</li> </ul>	<b>Estimation:</b> Concepts of estimation, estimator and estimate, Characteristics of Good Estimators: Factorization theorem, minimum variance unbiased estimator (MVUE), Cramer-Rao inequality and MVB estimators.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• State the different methods of estimation.</li> <li>• Identify the best method of estimation.</li> </ul>	<b>Methods of Estimation:</b> Method of moment, minimum $\chi^2$ , OLS, ML and Baysian method.	Lecture Discussion Visual Presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Explain the methods</li> </ul>	<b>Interval Estimation:</b>	Lecture	Quiz/MCQ

<p>of interval estimation.</p> <ul style="list-style-type: none"> <li>• Interpret the confidence interval.</li> </ul>	<p>Concepts, methods of interval estimation: statistical methods, large sample method, pivotal quantity method and Bayes method. Properties of confidence interval.</p>	<p>Discussion Visual presentation Problems solving</p>	<p>Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Demonstrate and understanding of the basic concepts of hypothesis testing.</li> <li>• Demonstrate type-I and type-II error.</li> <li>• Illustrate the steps involved in test of hypothesis</li> </ul>	<p><b>Tests of Hypothesis:</b> Statistical Hypothesis. Steps involved in test of hypothesis, degrees of freedom, type-I and type-II error, level of significance, one tail and two tail tests, critical region, best critical region, most powerful test, uniformly most powerful test, Neyman- Pearson Lemma (Statement and application), likelihood ratio test, properties of likelihood ratio test.</p>	<p>Lecture Discussion Visual presentation Problems solving</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Select an appropriate hypothesis and statistic for given information.</li> <li>• Estimate the p-values and its interpret.</li> <li>• Draw conclusions and derive meaningful information from the business data.</li> </ul>	<p><b>Parametric Test:</b> Concepts, types and uses of test statistic(s), statistical tests based on <math>z</math>, <math>\chi^2</math>, <math>t</math> and <math>F</math> distributions.</p>	<p>Lecture Discussion Visual presentation Problems solving</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Explain about categorical data.</li> <li>• Apply the methods to analyze the categorical data.</li> <li>• Focus on odds ratio and risk ratio.</li> </ul>	<p><b>Analysis of Categorical Data:</b> Concept of contingency of categorical data, independence and association of attributes. Various measures of association for <math>r \times c</math> contingency table. Odds and risk ratio.</p>	<p>Lecture Discussion Visual presentation Problems solving</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Describe the relevance of non-parametric test in data analysis.</li> <li>• Demonstrate the</li> </ul>	<p><b>Non-parametric Test:</b> Concepts, goodness of fit, independence of attributes, Fisher's exact test,</p>	<p>Lecture Discussion Visual presentation Problems solving</p>	<p>Quiz/MCQ Short answer Essay type answer</p>

<p>procedure involved in carrying out non-parametric tests.</p> <ul style="list-style-type: none"> <li>• Design and conduct some selected non-parametric tests.</li> </ul>	<p>Kolmogorove-Smirnov test the sign test, Wilcoxon signed rank test, run test, median test, Mann-Whitney U-test and Kruskal-Walli's test.</p>		<p>Report</p>
<ul style="list-style-type: none"> <li>• Recognize the terminology of one-way and two-way ANOVA.</li> <li>• Differentiate one-way and two-way analysis of variance techniques.</li> <li>• Apply the appropriate methods in testing hypotheses relative to the experimental data.</li> </ul>	<p><b>Analysis of Variance:</b>  Concepts and types of analysis of variance, terminology of analysis of variance, assumptions and multiple comparison tests. Fixed effect and random effect model. Uses and applications of analysis of variance.</p>	<p>Lecture  Discussion  Visual presentation  Problems solving</p>	<p>Quiz/MCQ  Short answer  Essay type  answer  Report</p>
<p><b>Reference Books</b></p> <ol style="list-style-type: none"> <li>1. A. M. Mood, F. A. Graybill, D. C. Boes. (1999). Introduction to the Thory of Statistics, Third Edition, McGraw-Hill International Edition.</li> <li>2. M. N. Islam. (2004). An Introduction to Statistics and Probability, Book World, Dhaka, Bangladesh.</li> <li>3. A. R. Ahmed, M. A. A. Bhuiya, Z. A. Reza, M. Z. Hossain. (2015). Methods of Statistics, Rafia Publications, Seventh Edition, Dhaka, Bangladesh.</li> <li>4. G.H. Goulden. (1952). Methods of Statistical Analysis, John Wiley, New York.</li> <li>5. S.C. Gupta &amp; V.K. Kapoor. (1982). Fundamentals of Mathematical Statistics, S. Chand and Company Ltd, Ramnagar, New Delhi.</li> </ol>			

<b>Course Code: AGST 226</b> <b>Course Title: Inferential Statistics (Practical)</b>	<b>Credit Hours: 1</b>	<b>Level: 2</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to develop students' knowledge through hands on exercise about statistical methods used in different areas of agricultural economics.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire skills in various statistical methods and their applications in different agricultural economical fields.</li> <li>• Enable to conduct different statistical methods in related areas.</li> <li>• Equip the skills to apply statistical concepts and analytical tools to analyze and handle in the relevant fields.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-Learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Estimate the population parameter using methods of least square.</li> <li>• Compute the population parameter using methods of maximum likelihood.</li> </ul>	Determining different point estimators, their variances, efficiencies, sufficiency and MV estimators. Application of the methods of least squares, maximum likelihood	Lecture Multimedia presentation Group discussions Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Test the independence of two attributes.</li> <li>• Select appropriate test and interpret the result.</li> </ul>	Testing of goodness of fit and independence of two attributes. Testing 2X2 contingency table.	Lecture Multimedia presentation Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Compute confidence interval for given data.</li> <li>• Interpret the result.</li> </ul>	Test and confidence interval for population-proportion, mean, variance, equality of two means (independent and correlated samples).	Lecture Multimedia presentation Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Demonstrate the procedure involved in carrying out non-parametric tests.</li> <li>• Design and conduct some selected non-parametric tests for given data.</li> </ul>	Sign test, Wilcoxon signed rank test, median test, Kolmogorov-Smirnov test, Mann-Whitney U-test and Kruskal-Wallis test.	Lecture Multimedia presentation Group discussions Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Construct ANOVA for one-way and two-way in the agribusiness fields.</li> <li>• Develop an</li> </ul>	Analysis of variance of one and two-way classified data, applications of multiple comparison tests.	Lecture Multimedia presentation Group discussions	Problem solving Viva-voce Practical

<p>experimental design that will be useful in testing the hypothesis and making conclusion.</p> <ul style="list-style-type: none"> <li>• Apply the methods to identify the best treatment among the treatments.</li> </ul>		Practice problem solving	notebook
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**Reference Books**

1. A. M. Mood, F. A. Graybill, D. C. Boes. (1999). Introduction to the Theory of Statistics, Third Edition, McGraw-Hill International Edition.
2. M. N. Islam. (2004). An Introduction to Statistics and Probability, Book World, Dhaka, Bangladesh.
3. A. R. Ahmed, M. A. A. Bhuiya, Z. A. Reza, M. Z. Hossain. (2015). Methods of Statistics, Rafia Publications, Seventh Edition, Dhaka, Bangladesh.
4. G.H. Goulden. (1952). Methods of Statistical Analysis, John Wiley, New York.
5. S.C. Gupta & V.K. Kapoor. (1982). Fundamentals of Mathematical Statistics, S. Chand and Company Ltd, Ramnagar, New Delhi.

<b>Course Code: AGST 275</b> <b>Course Title: Application of Statistical Packages in Social Sciences (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 2</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is designed to develop students' knowledge about introduces computer literacy, operating system, system & application software, SPSS and STATA.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Describe the fundamentals of computer infrastructure components: hardware, software, and data communications systems.</li> <li>• Demonstrate proper file management techniques to manipulate electronic files and folders in a local and networked environment.</li> <li>• Explain the concepts and terminology used in the operation of application systems of SPSS and STATA in relevant fields.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Explain the fundamental concepts of computer.</li> <li>• Identify and discuss different functions of computer hardware and software.</li> <li>• Illustrate major steps in the historical development of computers and information systems.</li> </ul>	<b>Introduction to Computer:</b> Computer and its development. Types of computer according to size and function. Peripheral devices of computer system. Concept of software and hardware: BIOS, RAM, ROM, virus, compiler and interpreter.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Express the concepts of operating systems of Windows.</li> <li>• Recognize the different types of windows.</li> </ul>	<b>Operating Systems:</b> Operating systems of computer: Windows.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Demonstrate the terms in Word processing and office applications.</li> <li>• Summarize data, create graphs and perform statistical calculations using Excel.</li> <li>• Create and show slide presentations that include text, graphics, animation, and transitions.</li> <li>• Gather the knowledge on the basic features of PowerPoint.</li> </ul>	<b>Application Software:</b> Microsoft Office: Word, Excel, Access and PowerPoint.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report



<ul style="list-style-type: none"> <li>• Derive the basic terminology of SPSS and STATA.</li> <li>• Operate the operating system of SPSS and STATA.</li> </ul>	<b>Statistical Software:</b> SPSS and STATA. Structure of SPSS and STATA. operational commands, data properties, transformation, recoding and data management.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Demonstrate statistical analysis of agribusiness data using SPSS and STATA</li> <li>• Analyze and interpret the outputs for drawing inference</li> </ul>	<b>Applications in Agribusiness:</b> Computation of descriptive statistics, correlation and regression analysis, analysis of categorical data, test of hypothesis, analysis of variance, comparing means and graphical representation of data.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Demonstrate an analysis of variance (ANOVA) using SPSS and STATA</li> <li>• Apply multiple comparison tests in SPSS.</li> </ul>	<b>Analysis of Variance:</b> One-way and two-way ANOVA. Multiple comparison tests using SPSS and STATA.	Lecture Discussion Visual Presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report

### Reference Books

1. N.C. Leandro. Fundamentals of Natural Computing. Basic Concepts, Algorithms, and Applications 1st Edition, ISBN-13: 978-1584886433, ISBN 10: 1584886439
2. L.F. Torben. Microsoft Office Excel:Book Boon2010, eBook PDF , 135 pages ISBN-13 : 978-87-7681-675-9
3. C.A. Elliott & A.Wayne Woodward. Statistical Analysis Quick Reference Guidebook: With SPSS Examples, Paperback -2006 ISBN-10: 1412925606 ISBN-13: 978-1412925600
4. S. Rabe & H.B. Everitt. A Handbook of Statistical Analyses using STATA: Third Edition, A CRC Press Company Boca Raton London New York Washington, D.C.
5. Kalicharan, N. 2001. An introduction to Computer Studies. Cambridge University Press.Taxali, R.K. 2001. Software Made Simple. Tata McGraw Hill Publishing Company Limited

<b>Course Code: AGST 276</b> <b>Course Title: Application of Statistical Packages in Social Sciences (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 2</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to develop students' knowledge through hands on exercise about statistical methods by using software used in different areas of agricultural economics.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Create a spreadsheet and access database to tabulate and record values and perform statistical analysis.</li> <li>• Apply and carryout statistical analyses used in SPSS and STATA in relevant data.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The students will be able to- <ul style="list-style-type: none"> <li>• Recognize of terminology of Microsoft Excel.</li> <li>• Enter and edit business data in Microsoft Excel</li> <li>• Demonstrate automatic features, functions and equations in worksheet</li> <li>• Compute descriptive and inferential statistics using Microsoft Excel in the agribusiness data.</li> </ul>	<b>Data Analysis Using Microsoft Excel:</b> Descriptive statistics, charts, graphs, scatter diagram, correlation, regression.	Lecture Multimedia presentation Group discussions Practice the problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Create data file in Access.</li> <li>• Construct table and form in Microsoft Access.</li> <li>• Summarize data, queries, reports, macros and modules using Access.</li> </ul>	<b>Microsoft Access Applications:</b> Create a database using tables, queries, forms, reports, macros and modules.	Lecture Multimedia presentation Group discussions Practice the problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Conduct the operating system of SPSS and STATA.</li> <li>• Demonstrate statistical analysis of data using SPSS and STATA</li> <li>• Analyze and interpret the outputs for drawing inference</li> <li>• Perform an analysis of variance (ANOVA) one-way and two-way using SPSS and STATA</li> <li>• Interpret the outputs.</li> </ul>	<b>Data Analysis using SPSS and STATA:</b> Descriptive statistics, graphical presentation, correlation and regression, hypothesis testing, point and interval estimation, logistic regression and categorical data. One and two-way ANOVA, Time series analysis.	Lecture Multimedia presentation Group discussions Practice the problem solving	Problem solving Viva-voce Practical notebook

### **Reference Books**

1. N.C. Leandro. Fundamentals of Natural Computing. Basic Concepts, Algorithms, and Applications 1st Edition, ISBN-13: 978-1584886433, ISBN 10: 1584886439
2. L.F. Torben. Microsoft Office Excel:Book Boon2010, eBook PDF , 135 pages ISBN-13 : 978-87-7681-675-9
3. C.A. Elliott & A.Wayne Woodward. Statistical Analysis Quick Reference Guidebook: With SPSS Examples, Paperback -2006 ISBN-10: 1412925606 ISBN-13: 978-1412925600
4. S. Rabe & H.B. Everitt. A Handbook of Statistical Analyses using STATA: Third Edition, A CRC Press Company Boca Raton London New York Washington, D.C.
5. Kalicharan, N. 2001. An introduction to Computer Studies. Cambridge University Press.Taxali, R.K. 2001. Software Made Simple. Tata McGraw Hill Publishing Company Limited

<b>Course Code: AGST 425</b> <b>Course Title: Regression Analysis (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 4</b>	<b>Semester: I</b>
<b>Rationale:</b> The course is designed to develop students' knowledge among the relationship two or more variables. The course introduces correlation analysis, regression analysis, Logistic regression analysis and model selection procedure.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Acquire knowledge on the concepts of correlation, regression analysis and logistic analysis that would help them in understanding the relationship two or more variables.</li> <li>• Enrich knowledge on the concepts of model selection procedure.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Apply the methods to identify the relationship between two or more variables.</li> <li>• Demonstrate partial and multiple correlation coefficients.</li> <li>• Select an appropriate hypothesis and test of correlation coefficients.</li> </ul>	<b>Correlation Analysis:</b> Concepts of correlation, types of correlation, methods of studying correlation, Karl Pearson's correlation coefficient. Assumptions, properties, uses and limitations of correlation coefficient. Test of hypothesis and confidence interval of correlation coefficient, probable error of correlation coefficient, correlation ratio, intra-class correlation. Coefficient of determination. Rank correlation-Spearman's and Kendall's methods. Concepts, properties, uses, applications and limitations of multiple and partial correlation coefficient.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Explore the cause and effect relationship by the simple linear regression model.</li> <li>• Determine the strength and direction of the linear relationship between variables.</li> <li>• Fit the simple linear regression model and interpret the slope and intercept.</li> <li>• Estimate multiple linear regression models by</li> </ul>	<b>Regression Analysis:</b> Concepts, lines of regression, principles of least squares, fitting of linear regression lines, properties of OLS estimators and estimation of parameters, confidence intervals and test for intercept and regression co-efficient, F-test for overall significance of regression. Properties of regression coefficient. Standard error of estimate, properties of residuals, variance of residuals, co-efficient of multiple determination.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report

<p>OLS and ML methods.</p> <ul style="list-style-type: none"> <li>Evaluate the dummy variables regression model.</li> </ul>	<p>Multiple regression models- generalized least squares, weighted least squares, maximum likelihood estimators. Testing of hypothesis in multiple regression coefficients, dummy variables regression, polynomial regression and non-linear regression. Analysis of residuals and outliers. Path analysis, difference in difference method and panel data analysis. Concepts of multicollinearity, autocorrelation and heteroscedasticity.</p>		
<ul style="list-style-type: none"> <li>Illustrate the binary and multinomial variables.</li> <li>Fit the logistic regression model for binary and multinomial variables.</li> <li>Criticize and interpret the fitted logistic regression model.</li> </ul>	<p><b>Logistic Regression:</b> Concepts of binary, multinomial and ordinal logistic regression. Estimation and interpretation of coefficients. Criteria, properties, applications, uses and limitations of logistic regression.</p>	<p>Lecture Discussion Visual presentation Problems solving</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>Study model selection procedure.</li> <li>Select the best procedure of model selection for given information.</li> </ul>	<p><b>Model Selection Procedure:</b> Forward selection, backward elimination, stepwise and stage wise regression, ridge regression, principal component regression. Levels for selection procedures, Diagnostic criteria and test of significance. Robust regression.</p>	<p>Lecture Discussion Visual presentation Problems solving</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>Demonstrate an understanding of the time series data.</li> <li>Identify trends and seasonal variations in time series data.</li> <li>Forecast the time series data.</li> <li>Improve business forecast with better statistical models based on statistical analysis.</li> </ul>	<p><b>Time Series and Forecasting Analysis:</b> Concepts, components, uses and methods of time series. Probability models for time series; Stationary. moving average (MA), autoregressive (AR), ARMA and ARIMA models. Estimating the autocorrelation function and fitting ARIMA models. Forecasting exponential smoothing and ARIMA models.</p>	<p>Lecture Discussion Visual presentation Problems solving</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

### **Reference Books**

1. D. N. Gujarati, D. C. Porter, S. Gunasekar. (2013). Basic Econometrics, Fifth Edition, Tata McGraw Hill Education Private Limited.
2. M. N. Islam. (2004). An Introduction to Statistics and Probability, Book World, Dhaka, Bangladesh.
3. A. R. Ahmed, M. A. A. Bhuiya, Z. A. Reza, M. Z. Hossain. (2015). Methods of Statistics, Rafia Publications, Seventh Edition, Dhaka, Bangladesh.
4. G.H. Goulden. (1952). Methods of Statistical Analysis, John Wiley, New York.
5. S.C. Gupta & V.K. Kapoor. (1982). Fundamentals of Mathematical Statistics, S. Chand and Company Ltd, Ramnagar, New Delhi.
6. J.N. Kapur & H. Sexena. (1976). Mathematical Statistics, S. Chand & Company Ltd., Ramnagar, New Delhi.
7. R.N. Shil and S.C. Debnath. (1992). An Introduction to the Theory of statistics, MinatiShil and Amita, Debnath, Mymensingh.

<b>Course Code: AGST 426</b> <b>Course Title: Regression Analysis (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 4</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to develop students' knowledge through hands on exercise about statistical methods used in different areas of agricultural economics.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire skills in regression analysis and their applications in different agricultural economical fields.</li> <li>• Enrich the knowledge on understanding the relationship among two or more variables.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Compute correlation coefficient from quantitative data.</li> <li>• Apply appropriate method to calculate rank correlation.</li> <li>• Select an appropriate hypothesis and test of correlation coefficients.</li> </ul>	Compute Karl Pearson's correlation coefficient, correlation ratio, intra-class correlation. Rank correlation coefficient-Spearman's and Kendall's methods. Determination of partial and multiple correlation coefficients. Test of significance of simple, multiple, and partial correlation coefficient.	Lecture Multimedia presentation Group discussions Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Fit the multiple regression linear line for the given examples.</li> <li>• Estimate the parameters by ML method from multiple regression line.</li> <li>• Compute and interpret confidence interval of multiple regression coefficients.</li> </ul>	Fitting of simple and multiple (up-to three variables) regression lines by OLS method. Test of Significance of simple and multiple regression coefficients, tests of influential and outlier observations by different methods, Fitting of ridge regression, dummy variable regression and polynomial regression.	Lecture Multimedia presentation Group discussions Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Calculate and interpret the results using path analysis.</li> <li>• Interpret the results of DID.</li> <li>• Illustrate and interpret the panel data analysis.</li> </ul>	Path analysis, difference in difference analysis and panel data analysis.	Lecture Multimedia presentation Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Fit the logistic regression for binary, multinomial and ordinal variables.</li> <li>• Interpret the results.</li> </ul>	Fit the logistic regression for binary, multinomial and ordinal variables.	Lecture Multimedia presentation Practice problem solving	Problem solving Viva-voce Practical notebook

### **Reference Books**

1. D. N. Gujarati, D. C. Porter, S. Gunasekar. (2013). Basic Econometrics, Fifth Edition, Tata McGraw Hill Education Private Limited.
2. M. N. Islam. (2004). An Introduction to Statistics and Probability, Book World, Dhaka, Bangladesh.
3. A. R. Ahmed, M. A. A. Bhuiya, Z. A. Reza, M. Z. Hossain. (2015). Methods of Statistics, Rafia Publications, Seventh Edition, Dhaka, Bangladesh.
4. G.H. Goulden. (1952). Methods of Statistical Analysis, John Wiley, New York.
5. S.C. Gupta & V.K. Kapoor. (1982). Fundamentals of Mathematical Statistics, S. Chand and Company Ltd, Ramnagar, New Delhi.
6. J.N. Kapur & H. Sexena. (1976). Mathematical Statistics, S. Chand & Company Ltd., Ramnagar, New Delhi.
7. R.N. Shil and S.C. Debnath. (1992). An Introduction to the Theory of statistics, MinatiShil and Amita, Debnath, Mymensingh.



<b>Course Code: AGST 475</b> <b>Course Title: Research Methodology (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 4</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is designed to develop students' knowledge about research. The course introduces fundamental of research, problem definition and research proposal, research design, sampling design, attitude measurement, measurement and scaling concept, data management and analysis, report preparation and presentation.			
<b>Course Learning Outcomes:</b> Acquire knowledge on the concepts of social research that would help them finding and identifying the problem. Enrich knowledge on the concepts involved in data presentation, analysis, interpretation and drawing inference.			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>Perceive the fundamentals of research.</li> <li>Develop the scientific research hypothesis</li> <li>Formulate the research questions designed.</li> </ul>	<b>Fundamentals of Research:</b> Concept, aims, and objectives, importance of research methodology, types of research, selection and formulation of research problems, case study, criterion of good research, characteristics of research, scientific research, research hypothesis, research questions and ethics in research.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Identify the research problems.</li> <li>Develop the research proposal.</li> </ul>	<b>Problem Definition and Research Proposal:</b> The Nature of the problem, importance of problem definition, process of problem definition, purpose of proposal, types of research proposal, structuring research proposal, evaluation of research proposal.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Construct a research design.</li> <li>Differentiate the various types of research.</li> </ul>	<b>Research Design:</b> Concepts of research design, selection of appropriate research design, evaluation of research design, Types of	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report

	Research Design: Non-Experimental- exploratory, descriptive and causal research designs, Experimental- Pre-experimental, true-experimental and quasi-experimental research designs.		
<ul style="list-style-type: none"> <li>• Conduct appropriate sampling technique.</li> <li>• Determine the appropriate sample size.</li> </ul>	<p><b>Sampling Design:</b> Scales of measurement. Types of data. Techniques of primary data collection concept of population, sample, sampling frame, sampling and non-sampling error, characteristics of good sample. Probability and non-probability sampling techniques. Simple random sampling, stratified random sampling, systematic sampling, cluster sampling and multistage sampling. Introduction to PPS sampling. Determination of optimum sample size from finite and infinite population.</p>	<p>Lecture Discussion Visual presentation Problems solving Field trip</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Study the attitude management.</li> <li>• Classify the various types of data.</li> <li>• Apply techniques for measuring attitude.</li> </ul>	<p><b>Attitude Measurement:</b> Components of attitude, elements of measuring attitude. Techniques for measuring attitude, scaling techniques of attitude. simple attitude scale, category scale, Summated Ratings Methods - The Likert scale, semantic differential scale, numerical scale, constant sum scale, continuous rating/ graphic rating scale, paired comparison scaling.</p>	<p>Lecture Discussion Visual presentation Problems solving</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

<ul style="list-style-type: none"> <li>• Identify the techniques of measurement</li> <li>• Explain measurement and scale.</li> <li>• Apply the different test of reliability.</li> </ul>	<b>Reliability and Validity:</b> Criteria for Good Measurement: Reliability, validity and sensitivity, difference between reliability and validity, tests for reliability, different measures of validity.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Demonstrate an understanding of data management.</li> <li>• Analyze data using statistical techniques.</li> </ul>	<b>Data Management and Analysis:</b> Stages of data preparation process, preliminary plan of data analysis, questionnaire checking, editing, coding, re-coding, data cleaning, statistically adjusting data, all statistical techniques, including modeling and inference.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Demonstrate the ability to present research questions and research design</li> <li>• Write a report and preparing a presentation of report.</li> </ul>	<b>Report Preparation and Presentation:</b> Literature review, report writing, plagiarism and self plagiarism, oral presentation, research follow-up, reference writing.	Lecture Discussion Visual presentation Problems solving	Quiz/MCQ Short answer Essay type answer Report

### Reference Books

1. M. N. Islam. (2004). An Introduction to Research Methods, Mullick and Brothers, Dhaka, Bangladesh.
2. C. R. Kothari. (2004). Research Methodology: Methods and Techniques, New Age International Publishers, 4835/24, Ansari Road, Daryaganj, New Delhi – 11000.
3. M. N. Islam. (2004). An Introduction to Statistics and Probability, Book World, Dhaka, Bangladesh.
4. S.C Gupta, and V.K. Kapoor. (1988). Fundamentals of applied statistics, Chand and Com. New Delhi.
5. M. N. Islam. (2005). An Introduction to Sampling Methods: Theory and Application, Book World, Dhaka, Bangladesh.

<b>Course Code: AGST 476</b> <b>Course Title: Research Methodology (Practical)</b>	<b>Credit Hours: 1</b>	<b>Level: 4</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to develop students' knowledge through hands on exercise about research methods used in different areas of agricultural economics.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire skills in research and their applications in different agricultural economical fields.</li> <li>• Enrich knowledge and skill on report writing and presentation.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Select appropriate sampling technique for given data.</li> <li>• Interpret the findings.</li> </ul>	Drawing of Samples by simple random sampling, stratified random sampling and systematic sampling. Calculation of precision and gain due to stratification and systematic sampling as compared to SRS.	Lecture Multimedia presentation Group discussions Practice problem solving Field trip	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Calculate optimum sample size from finite population.</li> <li>• Determine optimum sample size from infinite population.</li> </ul>	Determination of optimal sample sizes from finite and infinite populations.	Lecture Multimedia presentation Group discussions Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Calculate data by different types of scale.</li> <li>• Summarize and interpret the results.</li> </ul>	Attitude scale, category scale, summated ratings methods - Likert scale, semantic differential scale, numerical scale, constant sum scale, stapel, continuous rating/graphic rating scale, behavioral differential, paired comparison scaling.	Lecture Multimedia presentation Group discussions Practice problem solving	Problem solving Viva-voce Practical notebook

<ul style="list-style-type: none"> <li>• Prepare a research proposal.</li> <li>• Identify the variables.</li> <li>• Construct a questionnaire to collect survey data.</li> <li>• Clean and manipulate survey data to analyze.</li> </ul>	Preparation of a research proposal and variable identification, construction and development of a questionnaire to collect survey data. Data cleaning, editing, coding and manipulating the collected data.	Lecture Multimedia presentation Group discussions Data collections Practice problem solving Field trip	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Compute reliability and validity.</li> <li>• Tests for reliability and validity.</li> </ul>	Computation of reliability and validity, tests for reliability and validity.	Lecture Multimedia presentation Practice problem solving	Problem solving Viva-voce Practical notebook
<ul style="list-style-type: none"> <li>• Write the abstract.</li> <li>• Prepare a report and slides for presentation.</li> </ul>	<b>Report Preparation and Presentation:</b> Abstract, report & reference writing and oral presentation.	Lecture Multimedia presentation Group discussions	Problem solving Viva-voce
<p><b>Reference Books</b></p> <ol style="list-style-type: none"> <li>1. M. N. Islam. (2004). An Introduction to Research Methods, Mullick and Brothers, Dhaka, Bangladesh.</li> <li>2. C. R. Kothari. (2004). Research Methodology: Methods and Techniques, New Age International Publishers, 4835/24, Ansari Road, Daryaganj, New Delhi – 11000.</li> <li>3. M. N. Islam. (2004). An Introduction to Statistics and Probability, Book World, Dhaka, Bangladesh.</li> <li>4. S.C Gupta, and V.K. Kapoor. (1988). Fundamentals of applied statistics, Chand and Com. New Delhi.</li> <li>5. M. N. Islam. (2005). An Introduction to Sampling Methods: Theory and Application, Book World, Dhaka, Bangladesh.</li> </ol>			

## Department of Development and Poverty Studies

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	DEPS 125: Sociology (Theory)	3	1	I
2.	DEPS 275: Bangladesh Studies (Theory)	3	2	II
3.	DEPS 325: Poverty Studies (Theory)	2	3	I
4.	DEPS 377: State and Local Government (Theory)	2	3	II
5.	DEPS 479: Development Studies (Theory)	2	4	II
	Theory	12		
	<b>Total</b>	<b>12</b>		

<b>Course Code: DEPS 125</b> <b>Course Title: Sociology (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 1</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide knowledge on contemporary socio-cultural, economical and human relationships under diversified socio-cultural system. This course will enrich students' knowledge to overcome their prejudices, misconceptions, egoistic ambitions, class and religious hatreds as well as boost up the level of tolerance among multi cultural communities.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Develop knowledge on diversified cultures and focusing overall socio-economic and political issues of the society.</li> <li>• Enhance the analytical thinking regarding human interaction, social organization and collective behavior of the entire social system.</li> <li>• Address the human relationships and emerging contemporary social problems under changing environment.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The student will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Explain rural sociology its meaning origin and development</li> <li>• Comprehend the role of sociologists and their relation with rural community.</li> </ul>	<b>Introduction:</b> Origin, meaning, importance and nature of sociology and rural sociology. Role of rural sociologists and rural community.	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Discuss about society, community and association.</li> <li>• Explain social institution, groups, isolations, group's networks.</li> </ul>	<b>Primary Concepts:</b> Basic concepts of society, institution and social groups.	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Illustrate culture and its diversity.</li> <li>• Boost up level of tolerance and maintain socio-cultural harmony among multicultural environment.</li> </ul>	<b>Culture:</b> Culture and its elements; norms, values, folkways, mores, cultural traits, cultural unity and diversity.	Lecture Visual presentation Interactive discussion and Field visit	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Illustrate the concepts and meaning of social interaction and its role in society.</li> </ul>	<b>Social Process;</b> Human interaction as the base of a society and its development.	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer

<ul style="list-style-type: none"> <li>• Explain family, kinship relationships and its importance under changing situation.</li> <li>• Ascertain respect, sympathy and ethical values among the family members.</li> </ul>	<p><b>Social Institutions:</b> Family, types and its functions. role of family and kinship bondage.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Describe social structure and class relations.</li> <li>• Elicit transformation of social structure over time.</li> </ul>	<p><b>Social Stratification:</b> Definition, Types of social stratification. The caste and class system.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Illustrate population theories, population growth, its mechanism and consequence.</li> <li>• Extract the ideas about migration and its consequences in society.</li> <li>• Interpret gender and its changing role in population growth.</li> </ul>	<p><b>Population:</b> Concept of demography, fertility, mortality, migration. Theories of population. Gender and sexuality.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Analyze contemporary social problems its nature, scope and causes.</li> <li>• Find the path to way out of the social problems.</li> </ul>	<p><b>Social Problems:</b> Overpopulation, Slums, Women harassment, Corruption, and social unrest.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Evaluate the structural change of the society.</li> <li>• Explain the path of social change its mechanism and related eminent theories.</li> </ul>	<p><b>Social Change:</b> Definition, causes and factors of social change.  Theories of social change.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Explain rural and urban society and livelihood.</li> <li>• Illustrate economic and cultural significance of agriculture.</li> <li>• Explicate social capital, trust and fatalism.</li> </ul>	<p><b>Rural Society:</b> Rural community and livelihood. Rural and urban society.</p>	<p>Lecture Visual presentation Interactive discussion and Field visit</p>	<p>Quiz Short answer Essay type answer</p>



<ul style="list-style-type: none"> <li>• Interoperate the fundamental social research methods.</li> <li>• Analyze social phenomena and construct sociological theories.</li> </ul>	<p><b>Social Research Methods:</b> Social research, types and methods of social research.</p>	<p>Lecture, Field visit Data collection Analyze collected data</p>	<p>Quiz Short answer Essay type answer Report presentation</p>
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**Reference Books**

1. C.N.S. Rao. 2012. Sociology. S. Chand & Company ltd. New Delhi.
2. J.B. Chitamber. 2003. Introductory Rural Sociology. New Age International (P) Limited, New Delhi.
3. R. T. Schaefer. 2010. Sociology. McGraw Hill, New York.
4. T.B. Bottomore. 1972. Sociology: A Guide of Problem and Literature. Allen and Unwin, London.
5. H.B. Frederick, O. F. Larson, G. W. Gillespie Jr. 1990. The Sociology of Agriculture. Greenwood Press. New York.
6. A. Giddens. 2014. Sociology. Simon Griffiths Polity. UK.

<b>Course Code: DEPS 275</b> <b>Course Title: Bangladesh Studies (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 2</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is deliberate to provide knowledge on socio-cultural background independence movement, chorological progress of economy and financial sectors. This course is also acquainting knowledge on health, education, migration, urbanization, environment and sustainable development of Bangladesh as a whole.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Enrich knowledge regarding different cultural fields; literature, arts, different communities and philosophical thought.</li> <li>• Enhance the analytical thinking regarding independent movement and birth of a new independent nation Bangladesh.</li> <li>• Boost up contemporary systematic thought about sector based economic progress, health, education, migration and urbanization in Bangladesh.</li> <li>• Augment understanding about natural resources, climate, environmental challenges to achieve sustainably developed Bangladesh.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The student will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Categories our own culture and its specialty.</li> <li>• Correlate and compare culture and human behavior.</li> </ul>	<b>Society and Culture of Bangladesh:</b> General background, Major cultural figures, Cultural diversity in Bangladesh.	Field visit Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Analyze the reason behind separation of Pakistan.</li> <li>• Recognize the discriminating role of West Pakistan.</li> <li>• Illustrate the independence movement.</li> </ul>	<b>Political Development of Bangladesh:</b> Problems facing the new nation of Pakistan and national integration between East and West Pakistan, Political mobilization and events leading to independence, Recent issues and development,	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Analyze sector-based economic growth and its dynamics.</li> <li>• Comprehend the population dynamic, migration and landlessness.</li> </ul>	<b>Economic Development of Bangladesh:</b> Nature of economic sectors in Bangladesh, its importance, and Changes. Trends in urbanization, migration and landlessness, birth and death rates and population structure and its dynamics.	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Illustrate the nature of NGOs and its role in development process.</li> </ul>	<b>NGOs and Financial Sector:</b> Non-governmental organizations (NGOs), The role of the financial	Lecture Visual presentation	Quiz Short answer Essay type

<ul style="list-style-type: none"> <li>• Asses the role of NGOs in mitigating unemployment problem and women empowerment.</li> </ul>	sector, social work and generation of employment.	Interactive discussion	answer
<ul style="list-style-type: none"> <li>• Describe the health and education policies of Bangladesh.</li> <li>• Explain the overall health and education delivery system.</li> </ul>	<b>Health and Education:</b> Health care delivery systems, health policy, policy provision and delivery of education in Bangladesh	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Identify the topography, river and drainage system, different natural resources in details.</li> <li>• Describe climate changes and its adverse impacts.</li> </ul>	<b>Environment and Development:</b> Physical features, climate, natural resources environmental challenges in Bangladesh.	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Elaborate past development goals and achievements.</li> <li>• Represent government policy and vision towards sustainable development.</li> </ul>	<b>Environmental and Sustainable Development:</b> The vision and target for 2021, policy actions, regional sustainable development visions, priority enabling measures.	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer

### Reference Books

1. Khan, M. S. K. and Khanam, D. 2011. Bangladesh Studies. ChaityChayonProkashoni.
2. Huque, M. (Ed.). 2016. Bangladesh: History, Politics, Economy, Society and Culture. University Press Limited.
3. Ali, A., Islam, M.F. and Kuddus, R.(Eds.). 1996. Development Issues of Bangladesh. University Press Limited.
4. Ali, A., Kuddus, R. and Andaleeb, S.S.(Eds.). 2003. Development Issues of Bangladesh (II). University Press Limited.
5. Islam, M. and Andaleeb, S.S.(Eds.). 2007. Development Issues of Bangladesh (III). University Press Limited.
6. Alauddin, M., Mujeri, M. K. and Nath, D. K.(Eds.). 2016. Bangladesh: Yesterday Today Tomorrow. SahityaProkash.

<b>Course Code: DEPS 325</b> <b>Course Title: Poverty Studies (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 3</b>	<b>Semester: I</b>
<b>Rationale:</b> The Poverty Studies course will focus on the fundamental aspects of poverty and inequality from the sociological viewpoint. This course will introduce the students to the nature, causes, consequences of poverty and inequality, different measuring methods of poverty and inequality, determinants of poverty as well as the different approaches of the governmental and non-governmental organization to combat poverty and inequality.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Develop conceptual knowledge about the basic aspects of poverty and inequality.</li> <li>• Make students capable of constructing poverty line, poverty index, measuring inequality using different theories and formulas.</li> <li>• Enhance the analytical thinking regarding the determinants of poverty and required initiatives to improve the situation of the poor</li> <li>• Improve knowledge on the governmental efforts to alleviate poverty and vulnerability added to non-governmental activities like microfinance</li> <li>• Activate the students to rethink to be an acting member of the society to meet up the challenge of widespread poverty and inequality</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The student will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Explain basic concepts of poverty and inequality.</li> <li>• Rationalize the reasons of poverty analysis.</li> </ul>	<b>Poverty:</b> The concept of well-being and poverty, reasons for poverty measurement.	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Discuss the steps in measuring poverty.</li> <li>• Apply different survey methods to explore and explain the real socio-economic phenomena.</li> <li>• Compare across households at similar consumption level.</li> </ul>	<b>Measuring Poverty:</b> Steps in measuring poverty, household surveys, key survey issues. Survey design, goods coverage and valuation, comparisons across households at similar consumption levels, living standards measurement (LSMS) and other measures of household welfare.	Lecture Visual presentation Interactive discussion and Field visit	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Differentiate different types of poverty lines.</li> <li>• Apply all the methods to determine poverty, including relative price problem.</li> </ul>	<b>Poverty Lines:</b> Concept of poverty line, relative poverty, absolute poverty, objective poverty lines, the cost-of-basic-needs method, food energy intake method, the relative price problem.	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer

<ul style="list-style-type: none"> <li>Analyze poverty indexes.</li> <li>Analyze and illustrate different types of poverty indexes.</li> </ul>	<p><b>Measures of Poverty:</b> Headcount index, poverty gap index, squared poverty gap (“poverty severity”) index, Sen Index ,the Sen-Shorrocks-Thon index, the Watts Index, time taken to exit, poverty mapping.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>Illustrate fundamental concepts of inequality.</li> <li>Analyze different inequality measures.</li> </ul>	<p><b>Inequality Measures:</b> Definition of inequality commonly used summary measures of inequality. Gini-coefficient of inequality, Inequality comparisons. Decomposition of income inequality.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>Explain the causes of poverty.</li> <li>Comprehend the poverty situation in Bangladesh.</li> <li>Explicate the characteristics of poverty at different levels.</li> <li>Identify the determinants of poverty.</li> </ul>	<p><b>Determinants of Poverty:</b> Causes of poverty, poverty situation in Bangladesh: a historical perspective. Regional level characteristics of poverty. Community level characteristics, Household and individual level characteristics, demographic characteristics, economic characteristics, social characteristics, Analyzing the Determinants of Poverty: Regression techniques.</p>	<p>Lecture Visual presentation, Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>Explain the inter-linkage between the growth and poverty.</li> <li>Analyze the policies to enhance security and reduce poverty and vulnerability.</li> </ul>	<p><b>Poverty Reduction Policies:</b> Growth and poverty, pro-poor growth, opportunity, empowerment, income security. Policies to enhance security and reduce vulnerability.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>

<ul style="list-style-type: none"> <li>Analyze poverty issues nationally and internationally.</li> <li>Examine poverty across the countries.</li> </ul>	<p><b>International Poverty Comparisons:</b> Introduction, overview of poverty analysis, poverty comparisons across the countries.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>Explain the recent trends of poverty in Bangladesh.</li> <li>Recognize the gender issues to alleviate poverty.</li> <li>Compare the regional and urban-rural poverty gaps.</li> </ul>	<p><b>Dynamics, Trends and Patterns of Poverty in Bangladesh:</b> Recent poverty trends in Bangladesh, consumption growth and distributional changes, gender and poverty, comparing regional and urban-rural poverty gaps.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>

**Reference Books**

1. Haughton, J. and Khandker, S. H. 2009. Handbook on Poverty and Inequality. The World Bank.
2. Babu, S. C. and Sanyal, P. 2009. Food Security, Poverty and Nutrition Policy Analysis: Statistical Methods and Application.
3. Hossain, M. and Bayes, A. 2010. Rural Economy & Livelihoods: Insights from Bangladesh. A H Development Publishing House.
4. Ahmed, S. and Hakim, M.A. 2004. Attacking Poverty with Microcredit. The University Press Limited.
5. World Bank. 2005. Poverty Manual, Introduction to Poverty Analysis, World Bank Institute.

<b>Course Code: DEPS 377</b> <b>Course Title: State and Local Government (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 3</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is encompassing the state and its origin, types of state, its elements, nature and functions in development process. It will also comprehend evolution of local government in Indian subcontinent its changes during different phases, decentralization process and structure and function of local government in Bangladesh including inclusion of women.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Boost up knowledge regarding state its origin related theories and be able to compare between different types of state, its nature and functions and role of states in development process.</li> <li>• Enrich historical thought on local government system in Indian subcontinent and its changes in British Pakistan and Bangladesh era.</li> <li>• Enhance critical ability to analyze local government and decentralization in the socio-economic development process.</li> <li>• Augment understanding about stature, function of local government in Bangladesh and find the relation between central government and local government.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The student will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Illustrate state and its origin, nature and different forms of states.</li> <li>• Comprehend the purpose and goals of a state.</li> <li>• Illustrate origin of law theories and nature.</li> </ul>	<b>Origin and Development of State:</b> Meaning & elements, nature, functions, purpose & end of the state. Sovereignty-meaning & characteristics, monism and pluralism. Law-meaning, source, kinds, theories on origin & nature of law. Concept of strong, weak and soft state. State failure and state collapse.	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Comprehend the role of state in development process.</li> <li>• Analyze the nature of Bangladesh state.</li> <li>• Explicate the land reform process in Bangladesh.</li> </ul>	<b>State and Development:</b> The state and the development process; Changing roles of the state; Different views regarding the nature and the role of state; Nature of Bangladesh state.	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Grasp the concept of sovereignty.</li> <li>• Illustrate the characteristics of sovereignty.</li> <li>• Represent the concept of Monism and Pluralism.</li> </ul>	<b>Sovereignty, Monism and Pluralism:</b> Meaning of sovereignty, characteristics of sovereignty, kinds of sovereignty, meaning of monism and pluralism	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer

<ul style="list-style-type: none"> <li>• Explain government and its function.</li> <li>• Interpret the concept of executive, bureaucracy, legislature and Judiciary.</li> </ul>	<p><b>Organization of government:</b> Meaning and function of executive, bureaucracy, legislature and Judiciary</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Distinguish different forms of governments.</li> <li>• Compare among different types of governments and analyze their advantages and drawbacks.</li> </ul>	<p><b>Forms of Government</b> Meaning and criticism of aristocracy, dictatorship, democracy, federal government, unitary government, parliamentary government and presidential government</p>	<p>Lecture Visual presentation Interactive discussion,</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Characterize the constitution.</li> <li>• Confer the history of constitutional Development of Bangladesh.</li> <li>• Illustrate the salient features of Bangladesh constitution.</li> </ul>	<p><b>Constitution and Constitutional development in Bangladesh:</b> Constitution and its history of development, salient features of constitution.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Explain local government its nature and functions.</li> <li>• Intepret decentralization and its effectiveness in development process.</li> </ul>	<p><b>Local Government and Decentralization:</b> Local government its structure and functions. Governance and decentralization.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Comprehend the origin of local government in Indian subcontinent.</li> <li>• Describe the chronological development of local government during British and Pakistan period.</li> <li>• Illustrate various historical acts, reforms and ordinance related to local government.</li> </ul>	<p><b>Evolution of local Government: Local Government in British Period (1870-1947):</b> Evolution of local government in British India; Various Acts: Chowkidary Panchayet Act 1870, 1882, 1885; Report on the Decentralization Committee 1907-1909; Morley-Minto Reforms; Montageu-Chelmsford Reforms; Bengal Village Local Government Act 1919; Leving Report 1913-14.<b>Local Government in Pakistan Period (1947-1971):</b> Basic Democracy Order of Ayub Khan.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>



<ul style="list-style-type: none"> <li>• Illustrate decentralization and its nature.</li> <li>• Confer decentralization of local government and its prerequisite for countries' development.</li> </ul>	<p><b>Decentralization of Local Government:</b> Decentralization and its meaning. Nature of decentralization in Bangladesh. Purposes of decentralization.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Illustrate local government system in Bangladesh, local level planning and Finance.</li> <li>• Interpret local governments' functions and its relations with central government.</li> <li>• Evaluate different local government Act. in Bangladesh.</li> </ul>	<p><b>Local Government in Bangladesh:</b> Evolution, structure, composition and functions of local government, central-local relations, local level planning, local government finance, local government reform commissions/committees, local government act of Bangladesh.</p>	<p>Lecture Visual presentation Interactive discussion and Field visit</p>	<p>Quiz Short answer Essay type answer</p>

### Reference Books

1. Johari, J.C. 2005. Principles of Modern Political Science. Sterling Publishers Pvt. Ltd, New Delhi.
2. Talukdar, Mohammad Rafiqul Islam. 2009. Rural Local Government in Bangladesh. Osder Publications, Dhaka, Bangladesh.
3. Alam Muhammad Mustafa et al. 1984. Development through Decentralization in Bangladesh: Evidence and Perspective. University Press Ltd Bangladesh.
4. Siddiqui Kamal. 1994. Local Governance in Bangladesh: Leading Issues and Major Challenges. University Press Ltd Bangladesh.
5. Chowdhury Suvra, Panday Prtanab Kumar. 2018. Strengthening Local Governance in Bangladesh: Reform, Participation and Accountability. Springer International Publishing AG.

<b>Course Code: DEPS 479</b> <b>Course Title: Development Studies (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level:4</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is design to orient students with a multidisciplinary introduction to development with the fundamental concepts and theories in the development studies field, underlining their significance to the recent trend of growth and economic development. The course offers a base for further detailed understanding and critical thinking of development issues with a better appreciation of the dynamics involved in development and the theories that account for it.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Increase the understanding and analytical skills of development and its complementary and supporting fields, as well as the ability to deal with its requirements, problems and complexities.</li> <li>• Able to identify the problems, setting development priorities, and making the appropriate decisions.</li> <li>• Qualify the students to come up with development plans and participate in their execution and follow-up.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The student will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Elaborate the basic concepts of development.</li> <li>• Analyze traditional and modern definition of development.</li> </ul>	<b>Development and its Concept:</b> Economics, institution, and development, measuring development and underdevelopment, some basic indicators of development, long-run causes of comparative development.	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Illustrate the theories and models of development studies.</li> <li>• Analyze critically any drawbacks of the theories.</li> <li>• Evaluate the relevance of these theories in Bangladesh.</li> </ul>	<b>Theories and Models of Development:</b> Mercantilism, economic nationalism, Post-WWII theories, linear-stages-of-growth model, structural-change theory, international dependence theory, neoclassical theory.	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Illustrate on basic human capital approach.</li> <li>• Identify the exact needs to develop efficient human resources to contribute in the society.</li> </ul>	<b>Human Capital:</b> Education and health in development, the central roles of education and health, improving health and education, Investing in Education And health: the human capital approach, the	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer

	gender gap: Women and education, educational systems and development, health systems and development.		
<ul style="list-style-type: none"> <li>• Explain the inter-linkage of environment and development.</li> <li>• Clarify the important theories related to environment and development.</li> <li>• Analyze the need for policy from a world perspective and their enforcement.</li> </ul>	<p><b>The Environment and Development:</b> The basic issues, traditional economic models of the environment, urban development and the environment, the need for policy reform, policy options in developing and developed countries</p>	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Evaluate development planning.</li> <li>• Explain the different aspects of development planning.</li> <li>• Analyze different stakeholders' role on the development policy making.</li> </ul>	<p><b>Development Policy Making and the Roles of Market, State and Civil Society:</b> The planning mystique, the nature of development planning, the rationale for development planning.</p>	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain the significance of financial system.</li> <li>• Identify the path way of macroeconomic stability.</li> <li>• Elaborate the reformation of financial system and fiscal policy for development.</li> </ul>	<p><b>Finance and Fiscal Policy for Development:</b> The role of the financial system, the road to macroeconomic stability, microfinance institutions, reforming financial systems and fiscal policy for development.</p>	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain the basic concept of sustainable development.</li> <li>• Analyze business case for sustainable development.</li> <li>• Assess the concept of sustainable development.</li> </ul>	<p><b>Sustainable Development:</b> Scope and definitions, environmental sustainability, the notion of capital in sustainable development, market failure, the business case for sustainable development, critique of the concept of sustainable development.</p>	Lecture Visual presentation Interactive discussion	Quiz Short answer Essay type answer

<ul style="list-style-type: none"> <li>• Grasp the linkage between governance and development.</li> <li>• Analyze the NGOs approach to development.</li> <li>• Explain the NGOs' activities in development.</li> </ul>	<p><b>Studies of Development Organization:</b> Governance and development, NGO's activity and NGOs Approach to Development: Concepts of NGOs in capitalist development; roles in development.</p>	<p>Lecture Visual presentation Interactive discussion and Field visit</p>	<p>Quiz Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Illustrate the millennium and sustainable development goals.</li> <li>• Analyze the achievement of MDGs goal in Bangladesh.</li> <li>• Explain the requirements to fulfill the SDGs goal in Bangladesh.</li> </ul>	<p><b>The Millennium and Sustainable Development Goal:</b> Understanding the millennium and sustainable development goals, achievement of millennium development goals and Bangladesh and progress of sustainable development goals.</p>	<p>Lecture Visual presentation Interactive discussion</p>	<p>Quiz Short answer Essay type answer</p>

### Reference Books

1. Ghatak, S. 2003. An Introduction to Development Economics. 4th Edition. London and New York: Routledge.
2. Gillis, M et al. 1996. Economics of Development. New York: Norton.
3. Lal, Deepak. 2000. The Poverty of 'Development Economics'. New Delhi: Oxford University Press.
4. Meir, G. and Rauch, J.E. 2000. Leading Issues in Economic Development. 7th Edition. Oxford: Oxford University Press.
5. Potter, Robert, B. 2004. 'The Provenance of Progress in Development Studies', Progress
6. Roy, D. 1998. Development Economics. Oxford: Oxford University Press.
7. Schech S. and Haggis J. 2000. Culture and Development: A Critical Introduction. Oxford:
8. Thirwall, A.P. 1999. Growth and Development. New York: Macmillan.
9. Todaro, M.P. and Stephen, C.S. 2003. Economic Development. Singapore: Pearson Education 8th ed.
10. Willis K. .2006. Theories and Practices of Development. London and New York. Routledge.

## Department of Management and Finance

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	MAFI 175: Principles of Management (Theory)	3	1	II
2.	MAFI 177: Financial and Managerial Accounting (Theory)	3	1	II
3.	MAFI 225: Financial Management (Theory)	3	2	I
4.	MAFI 227: Organizational Behavior (Theory)	2	2	I
5.	MAFI 329: Bank Management (Theory)	3	3	I
6.	MAFI 379: Human Resources Management (Theory)	3	3	II
7.	MAFI 381: Agricultural Finance (Theory)	3	3	II
8.	MAFI 431: Management Information System (Theory)	3	4	I
9.	MAFI 432: Management Information System (Practical)	1	4	I
10.	MAFI 483: Agricultural Risk Management (Theory)	3	4	II
	Theory	26		
	Practical	1		
	<b>Total</b>	<b>27</b>		

<b>Course Code: MAFI 175</b> <b>Course Title: Principles of Management (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level:1</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide fundamental knowledge on management, management functions, principles of management, planning, organizing, directing, staffing, controlling, organizing, motivation and leadership style in an organization.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Provide basic knowledge on management aspects of business.</li> <li>• Acquire knowledge on models of management and their use as well as develop managerial skills.</li> <li>• Provides an orientation for business students on practical aspects of business organization.</li> </ul>			
<b>Intended Learning outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The students will be able to - <ul style="list-style-type: none"> <li>• Define Management and Organization.</li> <li>• Describe Process and Functions of management</li> <li>• Explain managerial roles, types and importance of manager.</li> </ul>	Definition of management, managers & kinds of managers, functions of management, concepts of productivity with effectiveness & efficiency, managerial roles, managerial skills, social responsibilities of managers.	Lecture Visual presentation Discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the principles of management on the basis of historical prospective.</li> <li>• Apply theory of Management.</li> </ul>	Principles of management – scientific management, administration management, behavioral management, human relations movement, quantitative management perspective, X-theory, Y- theory, Maslow’s need theory.	Lecture Visual presentation Discussion Case Study	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Explain the various environmental and Cultural issues of Organizations with real world phenomenon.</li> <li>• Acquaint with different regulatory bodies.</li> </ul>	Internal environment of organization, external environment of organization, different regulatory body and their activities.	Lecture Visual presentation Discussion Assignment	Quiz Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Discuss basic elements of planning and decision Making.</li> <li>• Classify and Explain different types of Planning.</li> </ul>	Organizational goals and its kinds, definition of planning and it's types, responsibilities for planning, crisis management, barriers to goal setting and planning.	Lecture Visual presentation Discussion Assignment Case Study	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Describe basic elements of Organizing.</li> <li>• Discuss different types of organizational structure</li> </ul>	Organizing, importance of organizing, organizational structure, designing jobs, job specialization, job characteristics approach, grouping jobs, reporting relationship in the organization, span of management.	Lecture Visual presentation Discussion Field visit	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Explain motivation, importance, Framework and Theories.</li> </ul>	Definition motivation, different approaches of motivation, content perspective on motivation, theories of motivation, popular motivational strategies.	Lecture Visual Workshop Seminar	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Define and discuss Leadership Practice.</li> <li>• Explain Leadership Style and Theories.</li> <li>• Comparison between Leadership and management.</li> </ul>	Leadership definition and it's types, leadership vs. management, type's of leadership power, leadership grid, theories of leadership, perspective of leadership.	Lecture Visual presentation Discussion	Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the communication process in an Organization.</li> <li>• Explain the barriers and solution of communication process.</li> </ul>	Forms of communication, outcomes of interpersonal behaviors, communication process, barriers of communications, different skills in communications.	Lecture Visual presentation Discussion Workshop Seminar	Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe Controlling process of Organization.</li> <li>• Explain the steps of controlling.</li> </ul>	Definition of controlling, purpose of controlling, level of controlling, steps in controlling process, forms of operational control, tools of financial control.	Lecture Visual presentation Discussion Assignment	Quiz Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Explain the latest research findings and information of Principles of Management.</li> </ul>	Latest research findings, information, regarding principles of management	Assignment	Report
<p><b>Reference Books</b></p> <ol style="list-style-type: none"> <li>1. Ricky W. Griffin, 2016. Management: Principles and Practice. 14th Edition, Houghton Mifflin Company, New York.</li> <li>2. Stephen P Robbins &amp; David A Decenzo, 2017. Fundamentals of Management- Essential Concepts &amp; Application, New York</li> </ol>			



<b>Course Code: MAFI 177</b> <b>Course Title: Financial and Managerial Accounting (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 1</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide fundamental concepts of financial and management accounting.			
<b>Course Learning Outcomes</b> <ul style="list-style-type: none"> <li>• Identify, record, and report transactions in accordance with Generally Accepted Accounting Principles.</li> <li>• Develop and Explain the nature and purpose of financial statements in relationship to decision making.</li> <li>• Develop the ability to use the fundamental accounting equation to analyze the effect of business transactions on an organization's accounting records and financial statements. .</li> <li>• Apply the fundamental concepts and assumptions that underlie financial accounting principles.</li> <li>• Demonstrate an Explaining of the steps of the accounting cycle and of the basic elements of the four financial statements.</li> <li>• Define managerial accounting, cost concepts and the basics of cost/volume/profit relationships.</li> <li>• Recognize the basics of attaching products to services, process costing and activity based costing.</li> <li>• Prepare budget efficiently and measure performance by analyzing standard costs.</li> <li>• Identify joint allocation principles and effective decision making skills for accounting managers.</li> <li>• Differentiate between various investment, transactions and performance measurements.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>  The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Explain what accounting is.</li> <li>• Identify the users and uses of accounting.</li> <li>• Relate ethics with fundamental business concept.</li> <li>• Explain generally accepted accounting principles.</li> <li>• Explain the monetary unit assumption and the economic entity assumption.</li> <li>• State the accounting equation, and define its components.</li> <li>• Analyze the effects of business transactions on the accounting</li> </ul>	<b>Accounting in Action and Accounting Principles:</b> Definition of Accounting; Users of Accounting Data; Brief History of Accounting; Book keeping and Accounting; The Accounting Profession. Ethics-Fundamental Business Concept; Generally Accepted Accounting Principles; Assumptions; Basic Accounting Equation. Transaction Analysis;	Lecture Interactive discussion	Quiz/MCQ Short answer Essay type answer

<p>equation.</p> <ul style="list-style-type: none"> <li>• Explain the four financial statements and how they are prepared.</li> </ul>	<p>Double Entry Book-keeping; Summary of Transactions; Financial Statements.</p>		
<ul style="list-style-type: none"> <li>• Explain what an account is and how it helps in the recording process.</li> <li>• Define debits and credits and explain their use in recording business transactions.</li> <li>• Identify the basic steps in the recording process.</li> <li>• Explain the benefits and use of journal in the recording process.</li> <li>• Explain the benefits and use of ledger in the recording process.</li> <li>• Explain what posting is and how it helps in the recording process.</li> <li>• Prepare a trial balance and explain its purposes.</li> </ul>	<p><b>The Recording Process:</b> The Account-Debits and Credits; Expansion of Basic Equation. Steps in the Recording Process-The Journal; The Ledger. The Trial Balance-Limitations of a Trial Balance; Locating Errors.</p>	<p>Lecture Visual presentation Discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Explain the time period assumption.</li> <li>• Explain the accrual basis of accounting.</li> <li>• Explain the reasons for adjusting entries.</li> <li>• Identify the major types of adjusting entries.</li> <li>• Prepare adjusting entries for deferrals.</li> <li>• Prepare adjusting entries for accruals.</li> <li>• Describe the nature and purpose of an adjusted trial balance.</li> </ul>	<p><b>Adjusting the Accounts:</b> Timing Issues-Selecting an Accounting time Period; Fiscal and Calendar Years; Recognizing Revenues and Expenses. The Basics of Adjusting Entries-Types of Adjusting Entries; Adjusting Entries for Prepayments; Adjusting Entries for Accruals; Summary of basic Relationships. Preparing the Adjusted Trial Balance; Preparing Financial Statements; Accrual vs. Cash Basis of Accounting.</p>	<p>Lecture Visual presentation Discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>

<ul style="list-style-type: none"> <li>• Prepare a worksheet.</li> <li>• Explain the process of closing the books.</li> <li>• Describe the content and purpose of a post closing trial balance.</li> <li>• State the required steps in the accounting cycle.</li> <li>• Explain the approaches to preparing correcting entries.</li> <li>• Identify the sections of a classified balance sheet.</li> </ul>	<p><b>Completion of the Accounting Cycle:</b> Using a Work Sheet Steps in preparing a Work Sheet; Preparing Financial Statements from a Work Sheet; Preparing Adjusting Entries from a Work Sheet. Closing the Books- Preparing Closing Entries; Posting Closing Entries; Preparing a Post-Closing Trial Balance. Summary of the Accounting Cycle- Reversing Entries-An Optional Step; Correcting Entries-An Avoidable Step Classified Financial Statements-Standard Classifications; Classified Balance Sheet.</p>	<p>Lecture Visual presentation</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Describe the role of management accountants in an organization.</li> <li>• Compare Service, Merchandising, and Manufacturing Organizations</li> <li>• Explain the basic concepts Underlying Lean Production, the Theory of Constraints (TOC), and Six Sigma.</li> <li>• Explain the importance of upholding ethical standards.</li> </ul>	<p><b>Introduction to Management Accounting:</b> Accounting and its branches, concepts of management accounting, role of management accounting in organizations, relations and differences between financial accounting, management accounting and cost accounting. Tools and techniques of management accounting and its limitations.</p>	<p>Lecture Interactive discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Identify the major differences and similarities between financial and managerial accounting.</li> <li>• Identify and give examples of</li> </ul>	<p><b>Cost Concepts and Classifications:</b> General cost classifications- cost classifications on financial statements - the flow of cost in manufacturing</p>	<p>Lecture Visual presentation Discussion</p>	<p>Quiz/MCQ Short answer Essay type</p>

<p>each of the three basic manufacturing cost categories.</p> <ul style="list-style-type: none"> <li>• Distinguish between product costs and period costs and give examples of each.</li> <li>• Prepare an income statement including calculation of the cost of goods sold.</li> <li>• Prepare a schedule of cost of goods manufactured.</li> <li>• Differentiate between variable costs and fixed costs.</li> <li>• Explain the differences between direct and indirect costs.</li> <li>• Explain cost classifications used in making decisions: differential costs, opportunity costs, and sunk costs.</li> </ul>	<p>company- cost classifications predicting cost behavior- cost classifications for decision making.</p>		<p>answer</p>
<ul style="list-style-type: none"> <li>• Distinguish between process costing and job-order costing and identify companies that would use each costing method.</li> <li>• Identify the documents used in a job-order costing system.</li> <li>• Compute predetermined overhead rates and explain why estimated overhead costs (rather than actual overhead costs) are used in the costing process.</li> <li>• Explain the flow of costs in a job-order costing system and prepare appropriate journal entries to record costs.</li> <li>• Apply overhead cost to Work in Process using a predetermined overhead rate.</li> <li>• Prepare schedules of cost of goods manufactured and cost of goods sold.</li> <li>• Use T-accounts to show the flow of costs in a job-order costing system.</li> </ul>	<p><b>Absorption and Variable Costing:</b> Variable and absorption costing, Variable vs. Absorption Costing: Operating income and income statements, absorption costing and performance measurement, Comparing Inventory Costing Methods: Absorption, variable, &amp; throughput/super-variable costing, and actual, normal &amp; standard costing; denominator-level capacity concepts and fixed-cost capacity analysis, choosing a capacity level for different purposes, planning and control of capacity costs.</p>	<p>Lecture Visual presentation Discussion</p>	<p>Quiz/MCQ Short answer Essay type answer</p>

<ul style="list-style-type: none"> <li>• Compute under applied or over applied overhead cost and</li> <li>• Prepare the journal entry to close the balance in Manufacturing Overhead to the appropriate accounts.</li> </ul>			
<ul style="list-style-type: none"> <li>• Explain changes in activity affect contribution margin and net operating income.</li> <li>• Prepare and interpret a cost-volume-profit (CVP)</li> <li>• Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.</li> <li>• Show the effects on contribution margin of changes in variable costs, fixed costs, selling price, and volume.</li> <li>• Determine the level of sales needed to achieve a desired target profit.</li> <li>• Determine the break-even point.</li> <li>• Compute the margin of safety and explain its significance.</li> <li>• Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.</li> <li>• Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.</li> </ul>	<p><b>Cost-Volume-Profit Relationships:</b> Identifying resources, activities, costs, and cost drivers, variable and fixed costs, CVP Analysis: Computing the break-even point (BEP), graphing the BEP, changes in fixed expenses, changes in unit contribution margin, target net profit and an incremental approach, Multiple Changes in Key Factors; Additional Uses of CVP Analysis: Best cost structure, operating leverage, margin of safety, Contribution Margin and Gross Margin; Nonprofit application of CVP analysis, sales-mix analysis, impact of income taxes.</p>	<p>Lecture Visual presentation</p>	<p>Quiz/MCQ Short answer Essay type answer</p>

<ul style="list-style-type: none"> <li>• Identify relevant and irrelevant costs and benefits in a decision.</li> <li>• Prepare an analysis showing whether a product line or other business segment should be dropped or retained.</li> <li>• Prepare a make or buy analysis.</li> <li>• Prepare an analysis showing whether a special order should be accepted.</li> <li>• Determine the most profitable use of a constrained resource and the value of obtaining more of the constrained resource.</li> <li>• Prepare an analysis showing whether joint products should be sold at the split-off point or processed further.</li> </ul>	<p><b>Relevant Costs for Decision Making:</b>  Management’s decision-making process-identifying different costs and benefits- different costs for different purposes-the incremental analysis approach-types of incremental analysis- accept an order at a special price-make or buy-sell or process further-retain or replace equipment-eliminate an unprofitable business segment-allocate limited resources.</p>	Lecture  Visual presentation  Discussion	Quiz/MCQ  Short answer  Essay type answer
<ul style="list-style-type: none"> <li>• Compare variable costing and absorption costing and compute unit product costs under each method.</li> <li>• Prepare income statements using both variable and absorption costing.</li> <li>• Reconcile variable costing and absorption costing net operating incomes and explain why the two amounts differ.</li> <li>• Explain the advantages and disadvantages of both variable and absorption costing.</li> </ul>	<p><b>Variable Costing: A Tool for Management:</b> Unit cost computation, variable costing for decision making.</p>	Lecture  Visual presentation  Discussion	Quiz/MCQ  Short answer  Essay type answer
<ul style="list-style-type: none"> <li>• Explain the latest research findings and information of Financial Accounting.</li> </ul>	latest research findings, information, regarding financial accounting.	Assignment	Report

### **Reference Books**

1. J. J. Weygandt, P. D. Kimmel, D. E. Kieso. 2012. Accounting Principles. 12th Edition. John Wiley & Sons, New York.
2. Low, M., Davey, H., Ling, A., Sharma, U. and Cheng, A. 2013. Accounting Principles and Practice. 1st Edition. Cengage Learning.
3. Horngren & Harrison 2.12. Financial and managerial Accounting Package. 6th Edition. Pearson Learning Solutions.
4. Needles, Belverd E., Jr., Henry R. Anderson and James C. Caldwell. 1992. Principles of Accounting. 5th Edition. Houghton Mifflin.
5. Belverd E. Needles, Marian Powers, Susan V. Crosson. 2011. Principles of Accounting. 11th Edition. Cengage Learning.
6. C. T. Horngren, G. L. Sundem, W. O. Stratton, J. Schatzberg, and D. Burgstahler. Introduction to Management Accounting (Latest Edition). Upper Saddle River, New Jersey: Prentice Hall.
7. Ray H. Garrison, Eric W. Noreen, and Peter C. Brewer. Managerial Accounting (Latest Edition). Boston: McGraw-Hill & Irwin.
8. Charles T. Horngren, Srikant M. Datar, Madhav V. Rajan. Cost Accounting: A Managerial Emphasis (Latest Edition). Upper Saddle River, New Jersey: Prentice Hall.

<b>Course Code: MAFI 225</b> <b>Course Title: Financial Management (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level:2</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide fundamental knowledge of financial management, its different tools and techniques to analyze the financial situations in relation to business.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Provide basic knowledge on financial management of business.</li> <li>• Develop Explaining of financial statements and their analytical process to acquire skill for financial decision making.</li> <li>• Explain financial environments of business, markets, institutions and interest rates.</li> <li>• Describe the importance of time value of money and build the ability to use this concept in financial analysis.</li> <li>• Achieve the knowledge on risk and rate of return, capital market instruments and their valuation technique.</li> <li>• Gather knowledge and create expertise on cost of capital, capital budgeting, capital structure in an organization's financial system.</li> <li>• Provide practical orientation for business students on practical aspects of financial management in an organization.</li> </ul>			
<b>Intended Learning outcomes (ILOs)</b>  The students will be able to -	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define finance and financial management.</li> <li>• Describe the forces that will affect financial management and goals of a firm.</li> <li>• Explain the relationship between financial managers and their counterparts.</li> </ul>	<b>Introduction of Financial Management:</b> Definition of finance and financial management, career opportunities in finance, Financial management in the new millennium, alternatives forms of business organization, responsibilities of financial staff's, goals of corporation, business ethics, agency relationships.	Lecture,  Visual presentation  Discussion	Quiz  Short answer  Essay type answer



<ul style="list-style-type: none"> <li>Define and describe the key financial statements, cash flows and taxes.</li> <li>Explain the difference between accounting income and cash flow.</li> <li>Provides an overview of the federal income tax system.</li> </ul>	<p><b>Financial Statement Analysis:</b> Financial statements and reports, balance sheet, income statement, statement of retained earnings, net cash flow, statement of cash flows, modifying accounting data for managerial decisions, federal income tax system.</p>	Lecture Visual presentation Discussion Assignment	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Explain the various environmental and Cultural issues of Organizations with real world phenomenon.</li> <li>Acquaint with different regulatory bodies</li> </ul>	Internal environment of organization, external environment of organization, different regulatory body and their activities.	Lecture Visual presentation Discussion Assignment	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Show use of financial statements by managers to improve performance</li> <li>Evaluate the likelihood of collecting on loans</li> <li>Forecast earnings, dividends and stock prices.</li> </ul>	Ratio analysis, liquidity ratios, asset management ratios, debt management ratios, profitability ratios, market value ratios, trend analysis, uses and limitations of ratio analysis.	Lecture Visual presentation, Discussion Assignment Case Study	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Describe the markets where capital is raised, securities are traded and stock prices are established.</li> <li>Discuss different type's institutions that operate in financial markets.</li> <li>Explore the principle factors that determine the level of interest rates.</li> </ul>	<p><b>Financial Markets:</b> Financial markets and its type, financial institutions, stock market, cost of money, interest rate levels, determinants of market interest rates, term structure of interest rate, investing overseas, interest rates and business decisions.</p>	Lecture Visual presentation Discussion Case study	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>Define risk and it's relates to investments.</li> <li>Examine procedures managers use to measure risk.</li> <li>Discuss the relationship between risk and return.</li> </ul>	<p><b>Risk and Return:</b> Definition of risk, investments returns, stand-alone risk, probability distributions, expected rate of return, measuring stand-alone risk, risk in a portfolio context,</p>	Lecture Visual presentation Discussion	Quiz Test Short answer Essay type answer

	diversifiable risk versus market risk, concept of beta, relationship between risk and rates of return, physical assets versus securities.		
<ul style="list-style-type: none"> <li>• Give clear Explaining of the time value of money and its impact on stock prices.</li> <li>• Show how the timing of cash flows affects asset values and rates of return.</li> <li>• Practice the applications of time value analysis.</li> </ul>	<b>Time Value of Money:</b> Time lines, future value of money, present value of money, future value of an annuity, present value of an annuity, perpetuities, uneven cash flow streams, semiannual and others compounding periods, comparison of different types of interest rates, amortized loans.	Lecture Visual presentation Class practice Assignment	Quiz Test Analytical test Essay type answer Report.
<ul style="list-style-type: none"> <li>• Define and describe the features and types of bond.</li> <li>• Explain the types of risks to which both bond investors and issuers are exposed.</li> <li>• Describe the procedures for determining the values of and rates of return on bonds.</li> </ul>	<b>Valuation of Long Term Securities:</b> Define bond as a financial instruments, key features of bonds, types of bond, technical classifications of bond, bond valuation, bond yields, default risk, bond markets.	Lecture Visual presentation Discussion Mathematical application Assignment	Quiz Short answers Essay type answer Analytical test Report
<ul style="list-style-type: none"> <li>• Define and describe the features and types of stocks.</li> <li>• Describe the procedures for determining the values of and rates of return on stocks.</li> </ul>	<b>Valuation of Long Term Securities:</b> definition of Stocks, bonds versus stocks, types of stocks, futures of common stocks, valuation of common stocks, features of preferred stocks, valuation of preferred stocks.	Lecture Visual presentation Discussion Mathematical application Assignment	Quiz Short answers Essay type answer Analytical test Report
<ul style="list-style-type: none"> <li>• Define cost of capital and its opportunity.</li> <li>• Describe how to calculate the cost of debt, equity, retained earnings.</li> <li>• Explain various ways to assign weights to the different components of</li> </ul>	<b>Cost of Capital:</b> Definition of cost of capital, opportunity cost of capital, Weighted average cost of capital (WACC), cost of debt, cost of preference capital, cost of equity, assigning weights, marginal cost of capital, factors	Lecture Visual presentation Discussion Mathematical application Assignment	Quiz Test Short answers Essay type answer Analytical test Report

cost.	affecting cost of capital.		
<ul style="list-style-type: none"> <li>• Explain capital budgeting and the different types of capital budgeting proposals.</li> <li>• Explain the various techniques of valuation of investment proposal.</li> <li>• Explain accounting rate of return method, payback period method, NPV method and IRR method.</li> </ul>	<p><b>Capital Budgeting:</b> Introduction about capital budgeting, Features of capital budgeting decision, types of projects, techniques of evaluation of capital budgeting decisions, accounting rate of return, payback period method, net present value method, internal rate of return method, NPV and IRR – A comparison.</p>	<p>Lecture Visual presentation Discussion Mathematical application Case study Assignment</p>	<p>Quiz Test Short answers Essay type answer Analytical test Report</p>
<ul style="list-style-type: none"> <li>• Explain the latest research findings and information of Financial Management.</li> </ul>	<p>Latest research findings, information, regarding Financial Management</p>	<p>Assignment</p>	<p>Report</p>

**Reference Books**

1. Eugene F. Brigham and Joel F. Houston, 2018. Fundamentals of Financial Management, 14<sup>th</sup> Edition, Thomson, South-Western.
2. Rajiv Srivastava and Anil Misra, 2016. 2<sup>nd</sup> Edition, Financial Management, Oxford university press.
3. Lawrance J. Gitman, 2017. Principles of Managerial Finance, 15<sup>th</sup> Edition, Pearson.

<b>Course Code: MAFI 227</b> <b>Course Title: Organizational Behavior (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level:2</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide fundamental knowledge of Organization, Organizational Behavior (OB), Managerial Activities, Management Functions, Effective Versus Successful Managerial Activities, Challenges and Opportunities for OB, Basic OB Model.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Describe the factors that impact individual and group behavior in organizations.</li> <li>• Explain, analyze, describe, and manage attitudes and behavior in organizations.</li> <li>• Study of organizational can improve and change individual, group, and organizational Behavior to attain individual, group, and organizational goals.</li> <li>• Use the tools of organizational behavior to increase effectiveness, an Organization’s ability to achieve its goal.</li> </ul>			
<b>Intended Learning outcomes (ILOs)</b>	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The students will be able to -			
<ul style="list-style-type: none"> <li>• Define Organizational Behavior</li> <li>• Describe functions of manager</li> <li>• Explain Challenges and Opportunities for OB</li> </ul>	<b>Organizational Behavior:</b> Definition of OB, Function of managers, Contributing Disciplines to the OB Field, Challenges and Opportunities for OB, Major Workforce Diversity Categories.	Lecture Visual presentation Discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the dimension of organizational behavior</li> <li>• Apply theory of learning</li> </ul>	<b>Foundations of Individual Behavior:</b> Definition of ability, intellect, and intelligence. explain the dimensions of intellectual ability, study of biographical characteristics and theories of learning	Lecture Visual presentation Discussion Case Study	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Classify and Explain the various types of personality and values</li> <li>• Discuss basic elements for good personality</li> </ul>	<b>Personality and Values:</b> Types of personality, personality traits, self-monitoring, types of values	Lecture Visual presentation Discussion Assignment	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Define justice</li> <li>• Explain Maslow’s Hierarchy of Needs and Assumptions of Maslow’s Hierarchy</li> </ul>	<b>Motivation Concepts:</b> Motivation, theories of motivation, justice.	Lecture Visual presentation , Discussion	Quiz Short answer Essay type answer

<ul style="list-style-type: none"> <li>• Discuss Herzberg’s Two-Factor Theory</li> <li>• Narrate David McClelland’s Theory of Needs, Goal-Setting Theory,(MBO)</li> </ul>			Report
<ul style="list-style-type: none"> <li>• Define emotions.</li> <li>• Discuss dimensions emotion.</li> <li>• Study mood as positive and negative effect.</li> <li>• Describe the sources of emotions and moods.</li> <li>• Compare gender and emotions</li> <li>• Compare felt versus displayed emotions.</li> <li>• Discuss external constraints on emotions.</li> <li>• Explain emotional intelligence and OB applications of explaining emotions.</li> </ul>	<p><b>Emotions and Moods:</b> Definition, dimension, affect, sources, constraints, comparison and application.</p>	Lecture Visual Presentation Discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Define and Classify Groups</li> <li>• Describe the causes of people joining in groups.</li> <li>• Explain stages of group Development and five-stage model of group development.</li> <li>• Illustrate alternative model: temporary groups with deadlines.</li> <li>• Describe an alternative model: temporary groups with deadlines.</li> <li>• Discuss group properties.</li> <li>• Relate between group cohesiveness, performance norms, and productivity.</li> <li>• Explain group decision making.</li> </ul>	<p><b>Foundations of Group Behavior:</b> Definition, classification, stage, properties, alternative model.</p>	Lecture Visual Presentation Discussion Report	Quiz Short answer Essay type answer

<ul style="list-style-type: none"> <li>• Describe why have teams become so popular?</li> <li>• Compare and contrast team versus group.</li> <li>• Comparing work groups and work teams.</li> <li>• Discuss about the classification of team work.</li> <li>• Apply turning individuals into team players.</li> <li>• Study about teams and quality management.</li> </ul>	<p><b>Explaining Work Teams-</b> Importance, comparison, types.</p>	<p>Lecture, Visual Presentation , Discussion Assignment</p>	<p>Quiz Test Short answer, Essay type answer Report .</p>
<ul style="list-style-type: none"> <li>• Write down the functions of communication.</li> <li>• Describe the communication process.</li> <li>• Mention the elements of the communication process and describe the communication process model.</li> <li>• Explain direction of communication and interpersonal communication.</li> <li>• Describe three common formal small-group networks.</li> <li>• Discuss the grapevine</li> <li>• Enumerate information richness of communication channels.</li> <li>• Explain barriers to effective communication.</li> <li>• Describe communication barriers between men and women.</li> </ul>	<p><b>Communication:</b> Function, process, element, model, direction, grapevine and barrier.</p>	<p>Lecture Visual Presentation Field Visit</p>	<p>Quiz Test Short answer, Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Define leadership?</li> <li>• Discuss the Trait theories, Behavioral theories, Contingency theories, Cognitive resource theory.</li> <li>• Explain Fiedler model, Contingency approach: hersey&amp;blanchard situational model.</li> </ul>	<p><b>Basic Approaches to Leadership:</b> Definition, theories, models, approaches.</p>	<p>Lecture Visual Presentation Discussion Assignment</p>	<p>Quiz Test Short answer Essay type answer Report.</p>

<ul style="list-style-type: none"> <li>• Discuss using words to shape meaning and inspire others</li> <li>• Explain inspirational approaches to leadership, Key characteristics of charismatic leaders and Level 5 leaders</li> <li>• Compare transactional and transformational leadership.</li> <li>• Describe characteristics of transactional leaders, Authentic leaders and ethical Behavior</li> </ul>	<p><b>Contemporary Issues in Leadership:</b> Characteristics, levels, comparison, comparison.</p>	<p>Lecture Visual Presentation Discussion Assignment</p>	<p>Quiz Test Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Explain the latest research findings and information of Organizational Behavior.</li> </ul>	<p>Latest research findings, information, regarding organizational behavior</p>	<p>Assignment</p>	<p>Report</p>

**Reference Books**

1. K Davis, “Human Behavior at Work, McGraw Hill Book Company, NY.
2. Robert Kreitner and Angelo Kinicki - Organizational Behavior, Irwin Mcgraw-Hill, Boston, USA.
3. S .P Robbins, Organizational Behavior, Prentice Hall India Ltd., New Delhi, India.

<b>Course Code: MAFI 329</b> <b>Course Title: Bank Management (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level:3</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide basic knowledge about the, fundamentals of bank management banking system in Bangladesh.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Study about the fundamentals of bank management in Bangladesh.</li> <li>• Gain knowledge on management of bank environment.</li> <li>• Explain the sources and uses of funds, performance evaluation and bank failure in Bangladesh.</li> <li>• Explain about the applications of electronic banking and bank risk management.</li> </ul>			
<b>Intended Learning outcomes (ILOs)</b> The students will be able to -	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define Bank.</li> <li>• Describe banking system around the world as well as Bangladesh.</li> <li>• Explain why bank management is so important in Bangladesh.</li> </ul>	<b>Introduction of Bank Management:</b> Definition, banking system around the world, banking system in Bangladesh, function of bank, rationale of increasing importance of bank management	Lecture Visual presentation Discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the factors(Internal and External) affecting banking system.</li> <li>• Discuss the role of central bank.</li> </ul>	<b>Management of Bank Environment:</b> Factors of environment of banking role of central bank.	Lecture Visual Presentation Discussion Case Study	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Classify and Explain the various types of personality and values</li> <li>• Discuss basic elements for good personality</li> </ul>	<b>Sources and uses of funds, performance evaluation and Bank failure:</b> Types of personality, personality traits, self-monitoring, types of values.	Lecture Visual presentation Discussion Assignment	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Write down the types of capital.</li> <li>• Describe instrument of raising bank capital.</li> <li>• Explain functions of bank capital and bank capital planning.</li> <li>• Illustrate Bank capital planning process.</li> </ul>	<b>Capital Management:</b> Types, instrument, importance, functions, capital planning, capital adequacy.	Lecture Visual presentation Discussion	Quiz Short answer Essay type answer Report



<ul style="list-style-type: none"> <li>• Define Electronic Banking.</li> <li>• Explain objectives and component of electronic banking.</li> <li>• Discuss types and use of electronic banking.</li> <li>• Narrate the problems and probable solution of electronic banking.</li> </ul>	<p><b>Electronic Banking:</b> Definition, objective, component, types, use, risk, problems and probable solutions.</p>	<p>Lecture Visual presentation Discussion</p>	<p>Quiz Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Define Risk and risk management in bank.</li> <li>• Discuss about the major component of bank risk.</li> <li>• Compare the bank risk and economy of Bangladesh.</li> </ul>	<p><b>Bank Risk Management-</b> Definition, perspective, major components of market risks, bank risk management system.</p>	<p>Lecture Visual presentation Discussion.</p>	<p>Quiz Test Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Discuss about Board of directors.</li> <li>• Explain the relationship between board of directors and bank management.</li> <li>• Explain standing committee of the board of directors.</li> <li>• Describe the functions of bank directors.</li> <li>• Discuss the liabilities of the bank directors.</li> </ul>	<p><b>Organization Management:</b> Introduction, concepts, board of directors, composition, oath, powers, personal attribute, responsibilities, functions, liabilities, of director, audit committee, chief executive.</p>	<p>Lecture Visual presentation Discussion Field visit</p>	<p>Quiz Test Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Mention the objectives of Deposit.</li> <li>• Discuss about the deposit of the banking system Vs. deposit of an individual bank.</li> <li>• Describe deposit processing.</li> <li>• Explain the factors determining the level of deposits.</li> <li>• Classify the special types of deposit scheme.</li> <li>• Describe the bank deposit insurance scheme in Bangladesh.</li> </ul>	<p><b>Deposit Management:</b> Objectives, types of depositors, types of deposit account, deposit processing, deposit mix, deposit schemes, insurance scheme.</p>	<p>Lecture Visual presentation Discussion</p>	<p>Quiz Test Short answer Essay type answer</p>

<ul style="list-style-type: none"> <li>• Define loan.</li> <li>• Describe the characteristics of bank loan and function of bank loan.</li> <li>• Discuss the importance of bank loan.</li> <li>• Explain sources of credit information and consideration of loan pricing.</li> <li>• Elucidate principles of sound lending.</li> </ul>	<p><b>Loan Management:</b> Definition, loan Vs. investment, characteristics, function, classification, sources, methods, principles.</p>	<p>Lecture Visual presentation Discussion</p>	<p>Quiz Test Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Describe Bank income and expenditure.</li> <li>• Elucidate profitability and bank size.</li> <li>• Determine bank income.</li> <li>• Show structure of bank expenditure.</li> <li>• Allocate bank income.</li> <li>• Explain problems of Allocation of bank income.</li> <li>• Describe factors influencing the pattern of allocation of bank income and Bank profit planning.</li> <li>• Show pattern of dividend policy in bank.</li> <li>• Illustrate guidelines for dividend payment by bank in Bangladesh.</li> </ul>	<p><b>Income, Expenditure and Dividend policy of Bank:</b> Income, expenditure, determination, earning structure, income allocation, and its problems.</p>	<p>Lecture Visual presentation Discussion</p>	<p>Quiz Test Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Explain the latest research findings and information Bank Management.</li> </ul>	<p>Latest research findings, information, regarding bank management</p>	<p>Assignment</p>	<p>Report</p>
<p><b>Reference Books</b></p> <ol style="list-style-type: none"> <li>1. S.A. Shakoor, A Handbook of Bank Management: With Particular Reference to Bangladesh Monograph.</li> <li>2. Bank Management, Dr. A R Khan, Brothers' Publications.</li> <li>3. The Bangladesh Banks,(Nationalization) Order, 1972.</li> <li>4. Edward Reed and Edward K.Gill Commercial Banking, practice Hall, New Jersey.</li> <li>5. Islamic Banking and Insurance, IERB, Dhaka.</li> </ol>			

<b>Course Code: MAFI 379</b> <b>Course Title: Human Resources Management (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level:3</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide knowledge on the management of an organization's workforce through the design and implementation of effective human resources policies and procedures.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Develop the knowledge, skills and concepts needed to resolve actual human resource management problems or issues.</li> <li>• Identify the human resources needs of an organization or department.</li> <li>• Explain the responsibilities of management, HRM specialists, managers, and employees in managing the employment relationship in a unionized or a non-unionized environment.</li> </ul>			
<b>Intended Learning outcomes (ILOs)</b> The students will be able to -	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Explain what human resource management is and how it relates to the management process.</li> <li>• Prepare list and briefly describe important trends influencing human resource management.</li> <li>• Describe four important human resource manager competencies.</li> </ul>	<b>Introduction to Human Resource Management (HRM):</b> Definition, importance, evolution of HRM, HRM model, how external influences affect HRM, staffing function, HRM in an entrepreneurial enterprise, HRM in a global village, HRM and corporate ethics, contemporary challenges in HRM.	Lecture Visual presentation Discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe cultural environment.</li> <li>• Explain different elements affect environment.</li> </ul>	<b>Strategic Implications of a Dynamic HRM Environment:</b> Explaining cultural environments, the changing world of technology, workforce diversity, the labour supply, continuous improvement programs, employee involvement.	Lecture Visual presentation Discussion Case study	Quiz Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>Define talent management and explain why it is important.</li> <li>Discuss the process of job analysis, including why it is important.</li> </ul>	<p><b>Job Analysis And The Talent Management Process:</b> Concept, the talent management process, importance, and information required for the job analysis, steps, methods, writing job description and specification.</p>	<p>Lecture, Visual presentation, Discussion Field visit</p>	<p>Quiz Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>Discuss importance of human resource planning.</li> <li>Describe the steps of HR planning.</li> </ul>	<p><b>Human Resource Planning:</b> Definition and importance of HR planning, steps in HR planning, linking organizational strategy to HR planning.</p>	<p>Lecture, Visual presentation, Discussion</p>	<p>Quiz Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>Describe sources of candidates.</li> <li>Discuss limitations of recruitment.</li> </ul>	<p><b>Recruiting:</b> Definition, sources and their advantages and disadvantages, limitations of recruitment in Bangladesh.</p>	<p>Lecture Visual presentation, Discussion of different sector sample recruitment test in Bangladesh</p>	<p>Recruitment Test of Govt. and Non-Govt. sector for students evaluation as Class Test</p>
<ul style="list-style-type: none"> <li>Explain selection. Why is it important to test and select employees.</li> <li>Describe selection process.</li> </ul>	<p><b>Selection:</b> Concept, importance, the selection process, selection for self-managed teams, key elements for successful predictors, selection from a global perspective.</p>	<p>Lecture Visual Presentation, Discussion</p>	<p>Quiz Short answer, Essay type answer</p>
<ul style="list-style-type: none"> <li>Define and discuss training and development.</li> <li>Explain methods of training.</li> </ul>	<p><b>Training and Developing Employees:</b> The purposes of employee orientation, orientation process, methods of training.</p>	<p>Lecture Visual presentation, Discussion</p>	<p>Quiz Individual and Group presentation</p>

<ul style="list-style-type: none"> <li>Describe the appraisal process.</li> <li>Explain the methods of performance appraisal in national and international organization.</li> </ul>	<p><b>Performance Management and Appraisal:</b> Performance management systems, performance management and EEO, the appraisal process, appraisal methods, factors that can distort appraisals, creating more effective performance management systems, international performance appraisal.</p>	<p>Lecture Visual presentation Discussion Group Discussion Workshop/Seminar</p>	<p>Quiz Individual and Group presentation Report</p>
<ul style="list-style-type: none"> <li>Describe the stages of career.</li> <li>Explain the enhances of career.</li> </ul>	<p><b>Managing Careers:</b> Concept, traditional career stages, career choices and preferences, enhancing your career.</p>	<p>Lecture Visual presentation Discussion</p>	<p>Quiz Short answer Essay type answer Assignments.</p>
<ul style="list-style-type: none"> <li>Explain different types of employee benefits.</li> <li>Describe policy issues in designing benefit packages.</li> </ul>	<p><b>Benefits and Services:</b> Types of employee benefits, policy issues in designing benefit packages, pay for time not worked, trends in health care cost controls, retirement benefits, personal services, flexible benefits programs.</p>	<p>Lecture, Visual Presentation Discussion Assignment</p>	<p>Quiz Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>Explain safety and health act.</li> <li>Describe different programs of maintaining a healthy work environment.</li> </ul>	<p><b>Safe and Healthy Work Environment:</b> The occupational safety and health act, job safety programs, maintaining a healthy work environment, employee assistance programs, international safety and health.</p>	<p>Lecture Visual presentation Discussion Field visit</p>	<p>Quiz Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>Explain the latest research findings and information of Human Resources Management.</li> </ul>	<p>Latest research findings, information, regarding Human Resources Management.</p>	<p>Assignment</p>	<p>Report</p>

**Reference Books**

1. Gary Dessler and Biju Varkkey, 2017. Human Resource Management, 14<sup>th</sup> Edition, Pearson publication, Delhi, India.
2. Wendell L. French, 2017. Human Resources Management, (Latest edition), Houghton Mifflin Company, Newyork, USA.
3. David A. Decenzo & Stephen P. Robbins, 2017. Fundamentals of Human Resource Management, 8<sup>th</sup> Edition, Wiley-India.
4. William B. Werther and Keith Davis, 2016. Human Resources and Personnel Management, (Latest edition), Irwin-McGraw Hill Co, USA.

<b>Course Code: MAFI 381</b> <b>Course Title: Agricultural Finance (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 3</b>	<b>Semester: II</b>
<b>Rationale:</b> This course aims to introduce the scope of agricultural finance and to identify the various sources and utilization procedure of agricultural credit to become a successful entrepreneur.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Explain and apply the concepts related to agricultural finance</li> <li>• Enrich knowledge on the financial statement analysis used in agricultural sector</li> <li>• Gain good knowledge on farm credit system in Bangladesh</li> <li>• Identify the most appropriate source of credit for investment</li> <li>• Explain the role of the Govt. and international agencies regarding agricultural finance</li> </ul>			
<b>Intended learning outcomes (ILOs)</b> The students will be able to-	<b>Course content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define agricultural finance</li> <li>• Describe the different sources of agricultural finance</li> </ul>	<b>Introduction:</b> definition, importance of agricultural Finance, role in farm production, types of agricultural finance, characteristics of good agricultural finance	Lecture Visual presentation Discussion	Quiz/MCQ Short answer
<ul style="list-style-type: none"> <li>• Describe various instruments used to secure credit</li> <li>• Explain different techniques involved in repayment</li> </ul>	<b>Acquisition of loan and repayment:</b> loan acquisition, types, legal issues, interest rates, different credit instruments, methods of repayment, analyzing repayment capacity	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the qualifications of the borrowers</li> </ul>	<b>Qualifications of a borrower:</b> qualifications, analysis of three R's and five C's of Credit	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the procedure of loan calculation in the case of agricultural finance</li> </ul>	<b>Loan calculation:</b> time value of money, loan amortization, PV, FV, annuities	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Analytical problems

<ul style="list-style-type: none"> <li>• Explain the various type of budgeting technique</li> <li>• Explain and analyze the financial statements of agricultural business</li> </ul>	<b>Capital budgeting and statements:</b> discounted and undiscounted measures, leasing, preparation and analysis of financial statements of agricultural farm	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Analytical problem
<ul style="list-style-type: none"> <li>• Describe the concept of value chain financing</li> </ul>	<b>Value chain financing:</b> definition, value chain financing examples, models of value chain financing, implications for rural development	Lecture Visual presentation Discussion Case studies	Quiz/MCQ Short answer Report
<ul style="list-style-type: none"> <li>• Discuss the role of different organizations in agricultural finance</li> </ul>	<b>Organizations role:</b> role of Bangladesh Government, role of private sector, role of international agencies and organizations in agricultural finance, case studies of international fund for agricultural	Lecture Visual presentation Discussion Case studies	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the farm credit system in Bangladesh</li> </ul>	<b>Farm credit system:</b> Bangladesh Bank's policy, role of nationalized commercial banks, BKB, special farm credit programs	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain the latest research findings and information of Agricultural Finance</li> </ul>	Latest research findings, information, regarding Agricultural Finance	Assignment	Report

### Reference Books

1. Warren Lee, MichealBoehlje, Aaron Nelson and William Murray. 1988. Agricultural Finance. Kalyani publisher, New Delhi.
2. Barry, P.; H. John; A. Hopkin and C.B. Bker. Financial Management in Agriculture, 2<sup>nd</sup>Edn. Danvile Illinois: The Interstate Printers and Publishers, Inc.
3. Nelson, Aaron G. and Murray, William G. (1967): Agricultural Finance. The Iowa State University Press, AMES.
4. Van Horne and J.M. Wachowich. 2010. Fundamentals of Financial Management. 13<sup>th</sup>Edn., Pearson education, UK.



<b>Course Code: MAFI 431</b> <b>Course Title: Management Information System (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level:4</b>	<b>Semester: I</b>
<b>Rationale:</b> This course helps students see the connection between information systems (IS) and business Performance. The use of information and communication technologies (ICT) by individuals and organizations dominates the business world.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Explain basic concepts for IT/IS.</li> <li>• Discuss organizational, business and strategic issues surrounding IT/IS.</li> <li>• Analyze and evaluate uses of strategic IT/IS in practice.</li> </ul>			
<b>Intended Learning outcomes (ILOs)</b> The students will be able to	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define MIS.</li> <li>• Describe Dimensions of information Systems</li> <li>• Explain types of business information systems.</li> </ul>	<b>Introduction:</b> Overview, Definitions, what’s new in management information systems(MIS), strategic business objectives of information systems, dimensions of information systems, contemporary approaches to information systems, business processes and information systems, types of business information systems, systems that span the enterprise, the information systems faction in business.	Lecture Visual presentation Discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe Organizations and information systems.</li> <li>• Explain impacts of information systems on organizations and business firms.</li> <li>• Explain the internet’s impact on competitive advantage.</li> </ul>	<b>Information Systems, Organizations and Strategy:</b> Organizations and information systems, impacts of information systems on organizations and business firms, using information systems to achieve competitive advantage: porter’s competitive forces model, information system strategies for dealing with competitive forces, the internet’s impact on competitive advantage, the business value chain model, synergies, core competencies and network-based strategies, an ecosystem strategic model.	Lecture Visual presentation Discussion Case Study	Quiz Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Explain the five moral dimensions of information systems.</li> <li>• Explain ethics in an information society</li> </ul>	<p><b>Ethical and Social Issues in Information Systems:</b> A model for thinking about ethical, social, and political issues, the five moral dimensions of information systems: information rights, property rights, accountability, and control, system quality, quality of life, ethics in an information society: basic concepts, ethical analysis, candidate ethical principles, professional codes of conduct .</p>	<p>Lecture Visual presentation Discussion Assignment</p>	<p>Quiz Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Discuss IT infrastructure.</li> <li>• Explain infrastructure components.</li> </ul>	<p><b>Information Technology Infrastructure and Emerging Technologies:</b> IT infrastructure: definition of IT infrastructure, evolution of IT infrastructure , infrastructure components: computer hardware platforms, operating system platforms, enterprise software applications, data management and storage, networking/ telecommunications platforms, internet platforms, consulting and system integration services, contemporary hardware platform trends, contemporary software platform trends.</p>	<p>Lecture Visual presentation Discussion Assignment Case Study</p>	<p>Quiz Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Describe organizing data in a traditional file environment.</li> <li>• Discuss using database to improve business performance and decision making.</li> </ul>	<p><b>Foundations of Business Intelligence-Databases and Information Management:</b> Organizing data in a traditional file environment, the database approach to data management, database management systems, using database to improve business performance and decision making: data warehouses, business intelligence, data mining, database and the web, managing data resources.</p>	<p>Lecture Visual presentation Discussion Field Visit</p>	<p>Quiz Short answer Essay type answer Report</p>

<ul style="list-style-type: none"> <li>• Describe computer network</li> <li>• Explain key digital networking technologies.</li> </ul>	<p><b>Telecommunications, the Internet, and Wireless Technology:</b> Definition of computer network, key digital networking technologies, communication networks, signals, types of networks, the global internet: internet services and communication tools, the world wide web, intranets and extranets wireless computer networks and internet access, RFID and wireless sensor network.</p>	<p>Lecture Visual presentation Discussion</p>	<p>Quiz Short answer, Essay type answer</p>
<ul style="list-style-type: none"> <li>• Explain malicious software.</li> <li>• Describe technologies and tools for protecting information resource.</li> </ul>	<p><b>Securing Information Systems: System Vulnerability and Abuse:</b> malicious software: viruses, worms, Trojan horses, and spyware, hackers and computer crime, internal threats: employees, software vulnerability, establishing a framework for security and control, technologies and tools for protecting information resource: access control: firewalls, intrusion detection systems, and antivirus software.</p>	<p>Lecture Visual presentation Discussion</p>	<p>Quiz Individual and Group presentation .</p>
<ul style="list-style-type: none"> <li>• Describe Enterprise systems.</li> <li>• Explain important dimensions of knowledge.</li> </ul>	<p><b>Key Systems Applications for the Digital Age:</b> Enterprise systems, supply chain management systems, customer relationship management systems, enterprise resource planning (ERP), enterprise applications: new opportunities and challenges, e-business vs. e-commerce, electronic commerce and the internet, types of electronic commerce, electronic commerce payment systems, organization learning and knowledge management: important dimensions of knowledge, the knowledge management value chain, types of knowledge management systems, expert systems, systems for</p>	<p>Lecture Visual presentation , Discussion Workshop/S eminar</p>	<p>Quiz Individual and Group presentation Group Discussion</p>

	decision support: management information systems (MIS), decision support systems (DSS), data visualization and geographic information systems, web-based customer decision–support systems, group decision-support systems (GDSS), executive support systems and balanced scorecard framework.		
<ul style="list-style-type: none"> <li>Describe for Systems development and organizational change.</li> <li>Explain the global environment.</li> </ul>	<b>Development Processes and Managing Systems:</b> Systems development and organizational change, completing the systems development process, management structure for information systems project, linking systems projects to the business plan, information systems cost and benefits, developing an international information systems architecture, the global environment: business drives and challenges, managing global information systems.	Lecture Visual Presentation Discussion	Quiz Short answer, Essay type answer Assignments
<ul style="list-style-type: none"> <li>Explain the latest research findings and information of Management Information System</li> </ul>	Latest research findings, information, regarding Management Information System	Assignment	Report
<b>Reference Books</b> <ol style="list-style-type: none"> <li>Laudon K. C. and Jane P. Laudon, Management Information Systems: Managing the Digital Firm, (11/e), Pearson Prentice Hall, India.</li> <li>James A. O’Brien, Management Information Systems, (8/e), McGraw -Hill.</li> <li>Gordon B. Davis and M. H. Olson, Management Information Systems, (Latest edition), McGraw Hill Company, N. J. USA.</li> <li>Burstein, J. Computers and Information System, (Latest edition), Holt, Rinehart and Winston, New York, USA.</li> </ol>			

<b>Course Code: MAFI 432</b> <b>Course Title: Management Information System (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level:4</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide knowledge on the policies and procedures for the planning, acquisition, deployment, and retention of a workforce of sufficient size and quality to allow an organization to attain its strategic goals.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Explore and explain the organizational foundations of IS and its emerging Strategic role in business, focusing on its relationship to organizational, managerial, ethical and social issues.</li> <li>• Explain the design, development, adoption, use, and management of IS.</li> <li>• Explain the technical foundations of IT in terms of hardware, software, data and databases, functionality, capabilities, and limitations.</li> </ul>			
<b>Intended Learning outcomes (ILOs)</b> The students will be able to	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define desktop management.</li> <li>• Explain the benefits of trouble shooting.</li> </ul>	<b>Desktop Management: H/W-Trouble shooting, HTML, PHP, web programming.</b>	Lecture Visual presentation Discussion	Quiz Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe data communication.</li> <li>• Explain data communication equipment.</li> <li>• Explain centralized data processing.</li> </ul>	<b>Data Communications, Networks &amp; Processing Methods:</b> Data communication, data switching, data communication equipment, computer-to-computer links, stand-alone computers & multi-user systems, centralized data processing, distributed processing & networks, LAN,MAN, WAN	Lecture Visual presentation Discussion Case study	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Explain the level of management.</li> <li>• Describe MIS, DSS and ESS.</li> </ul>	<b>Management Information Systems:</b> MIS & levels of management, presentation of management information, decision support systems, executive information systems, expert systems, MIS & decision making and preparation of MIS of any origination.	Lecture Visual Presentation Discussion Assignment	Quiz Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Discuss data base management.</li> <li>• Explain Database Software Packages.</li> </ul>	<p><b>Databases:</b> Application specific files versus databases, databases for management information, data independence &amp; data redundancy, database systems, and database software packages.</p>	<p>Lecture Visual presentation Discussion Assignment Case study</p>	<p>Quiz Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Explain the latest research findings and information of Management Information System</li> </ul>	<p>Latest research findings, information, regarding management information system</p>	<p>Assignment</p>	<p>Report</p>

**Reference Books**

1. Laudon K. C. and Jane P. Laudon, Management Information Systems: Managing the Digital Firm, (11/e), Pearson Prentice Hall, India.
2. James A. O'Brien, Management Information Systems, (8/e), McGraw -Hill.
3. Gordon B. Davis and M. H. Olson, Management Information Systems, (Latest edition), McGraw Hill Company, N. J. USA.
4. Burstein, J. Computers and Information System, (Latest edition), Holt, Rinehart and Winston, New York, USA.

<b>Course code: MAFI 483</b> <b>Course Title: Agricultural Risk Management (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 4</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide knowledge on risk analysis methods, their application and management in agriculture.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Explain theories underlying risk and risk management decision making.</li> <li>• Describe model risk including copulas.</li> <li>• Illustrate model of whole-farm risk management decisions.</li> <li>• Describe current policy developments with regard to risk management</li> </ul>			
<b>Intended learning outcomes (ILOs)</b> The students will be able to-	<b>Course content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define risk and agricultural risk</li> <li>• Describe deferent types of risk and their management strategies</li> </ul>	<b>Risks in Agriculture:</b> Overview, types of risk, risk management strategies and mechanisms.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the relationship between risk and farm sector</li> <li>• Explain expected utility model</li> <li>• Differentiates between risk attitude and risk aversion</li> <li>• Measure the risk attitude</li> </ul>	<b>Risk Attitude:</b> Concept and measurement approach, risk and farm sector, implication for risk management and analysis, expected utility model, risk attitude, measuring risk attitude.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe Risk concepts for alternative decision models</li> <li>• Explain Subjective and objective probabilities for positive and normative uses,</li> <li>• Identify and evaluate objective risk measures</li> </ul>	<b>Risk Concepts and Measures for Decision Analysis:</b> Risk concepts for alternative decision models, subjective and objective probabilities for positive and normative uses, objective risk measures.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Define Climate Risks</li> <li>• Describe the Challenges in Climate Variability</li> <li>• Define Drought Risk</li> <li>• Describe Climate Variability Management</li> </ul>	<b>Climatic Variability &amp; Change:</b> Climate Risks, Challenges in Climate Variability, Drought Risk, Floods & Cyclones, Catastrophe Protection for Non-Borrowing Farmers, Bankruptcy Law	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer

<ul style="list-style-type: none"> <li>Describe production risks in agriculture</li> <li>Explain how production risk minimized</li> </ul>	<b>Explaining Production Risks:</b> Enterprise diversification, crop insurance, contract production, evaluating new technologies	Lecture Visual Field visit	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Describe marketing risks in agriculture</li> <li>Explain how marketing risk minimized</li> </ul>	<b>Explaining Marketing Risks:</b> Personal considerations in marketing, developing a marketing plan, marketing plan discipline, marketing tools	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Analytical problems
<ul style="list-style-type: none"> <li>Describe financial risks in agriculture</li> <li>Explain the process of financial risk minimization</li> </ul>	<b>Explaining Financial Risks:</b> Farm records and financial analysis, interest rate risk, liquidity and meeting, cash flow requirements, insurance, family living costs, legal issues and security	Lecture Visual presentation Discussion	Quiz/MCQ, Short answer Analytical problem
<ul style="list-style-type: none"> <li>Describe Legal issues associated with agriculture</li> </ul>	<b>Legal Issues Associated with Agriculture:</b> Structural issues, contract arrangements, statutory, obligations, tort liability, environmental liability, summary	Lecture Visual presentation Discussion Case studies	Quiz/MCQ Short answer Report
<ul style="list-style-type: none"> <li>Discuss human resources risks in agriculture</li> </ul>	<b>Explaining human Resources Risks:</b> Managing people, estate planning	Lecture Visual presentation Discussion Case studies	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Describe Disaster Risk Management in Bangladesh</li> <li>Explain conceptual framework for Disaster Risk Management</li> </ul>	<b>Disaster Risk Management in Food and Agriculture:</b> Food security, agriculture and livelihoods, The challenge	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>Define Agricultural Insurance</li> <li>Explain importance and challenges of Agricultural Insurance in Bangladesh</li> <li>Explain the process of mitigate the agricultural risk through insurance</li> </ul>	<b>Agricultural Insurance:</b> Introduction, National Agricultural Insurance Scheme (NAIS), crop insurance as risk mitigation tool, Crop insurance – types, crop insurance – benefits & constraints, crop insurance evolution, crop insurance penetration, actuarial regime & risk transfer, insurance & credit linkage, recommendations, insurance of	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer



	vegetables & perennial horticultural crops, weather insurance, farm income insurance, livestock insurance, package insurance, private sector participation in crop insurance, Crop Insurance: Financial implications for XI plan period		
<ul style="list-style-type: none"> <li>• Explain the latest research findings and information of Agricultural Risk Management</li> </ul>	Latest research findings, information, regarding agricultural risk management	Assignment	Report
<p><b>Reference Books</b></p> <ol style="list-style-type: none"> <li>1. Hardaker, J. B., Lien, G, Anderson, J. R. and Huirne, R. B. M. 2015 Coping with Risk in Agriculture. 3<sup>rd</sup> edition</li> <li>2. Hoag, D. 2010. Applied Risk Management in Agriculture. CRC Press Taylor &amp; Francis Group</li> <li>3. Peter J. Barry 1984. Risk Management in Agriculture. Iowa Press University Press, Iowa.</li> </ol>			

## Department of Agricultural Botany

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hour	Level	Semester
1.	ABOT 225: Economic Botany(Theory)	2	2	I
	Theory	2		
	<b>Total</b>	<b>2</b>		

<b>Course Code: ABOT 225</b> <b>Course Title: Economic Botany (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 2</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide knowledge on economically important crop plants, their production, processing and prospect in business.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Categorize the plants based on the requirements of human being.</li> <li>• Provide knowledge on the food, fiber, timber, rubber, medicinal and other plants.</li> <li>• Acquire knowledge on plant products and their probable ways of business.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Discuss the importance of plant product, their industrial value and scope of marketing in home and abroad</li> </ul>	<b>Introduction:</b> Acquaintance with economically important plants and plant products. Present production level, marketing status and facilities in home and abroad, industrial value and scope in Bangladesh to utilize for benefit of important plants and their products. Different groups of plants to be studied are as follow	Lecture Discussion Assignment Visual presentation	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Classify plants based on way of intake by human for energy and nutrient</li> </ul>	<b>Food plants:</b> Cereals, oil yielding plants, pulse, fruit plants, vegetables, spices and condiments, beverage crops, sugar yielding plants, masticating and chewing plants products, roots and tuber crops etc.	Lecture Discussion Assignment Visual presentation	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Identify and use of different fiber yielding plants</li> </ul>	<b>Fiber yielding plants:</b> Jute, cotton, kenaf, sun hemp, flax, ramie, silk cotton etc.	Lecture Discussion Assignment Visual presentation	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Realize the value of timber yielding plants</li> </ul>	<b>Timber yielding plants:</b> Teak, Indian red wood, sal, jarul, mahogany, pines, Chambal, acacia, gamhar, powa, koroj, jack fruit, shirish, gorjan, boilam, iron wood etc.	Lecture Discussion Assignment Visual presentation	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Identify the higher and lower plant and their use</li> </ul>	<b>Medicinal plants:</b> Ipecae, ranwolfia, nux-vomica,	Lecture Discussion	Quiz Short answer

in medicine	cinchona, aconite, deadly night shade, poppy, ashok, arjun, apang, basak, iswarmul, ulatchandal, stevia, aloe vera etc.	Assignment Visual presentation	Essay type answer Report
<ul style="list-style-type: none"> <li>Illustrate the prospect of cultivation of ornamental plants in Bangladesh</li> </ul>	<b>Ornamental plants:</b> Flowering and non flowering plants of different types. Specially important ornamental plants which are important for marketing in home and abroad.	Lecture Discussion Assignment Visual presentation	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Realized the industrial value of rubber yielding plants</li> </ul>	<b>Rubber yielding plants:</b> Hevea brasiliensis, Manihot glaziovii, Castilloa elastic, Ficus elastic etc.	Lecture Discussion Assignment Visual presentation	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Describe the narcotics plants in view of production and processing; merits and demerits in human being.</li> </ul>	<b>Narcotics:</b> Tobacco, Indian Hemp, poppy etc.	Lecture Discussion Assignment Visual presentation	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Discuss the industrial use of different plants and their parts for producing perfumes.</li> </ul>	<b>Plants of aesthetic value:</b> Producing perfumes (essence, scent, atar etc.)	Lecture Discussion Assignment Visual presentation	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Discuss the scope of business which numerony plants and their processed product.</li> </ul>	<b>Other important plants for business:</b> Bamboos, cane, fodder, fuel and green manure producing plants etc. Plants producing paper, perfumes, cork, resin, gum, lac, dye, essential oils etc.	Lecture Discussion Assignment Visual presentation	Quiz Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Discuss possible ways of marketing of different agricultural plants and products.</li> </ul>	<b>Study tour:</b> Visit to different botanical gardens and different food processing industries.	Visit and discussion Visual observation.	Pre and post evaluation
<ul style="list-style-type: none"> <li>Enhance opportunities to gather knowledge by visiting about new plants and agro-based industry</li> </ul>			

### Reference Books

1. G.H.M. Lawrence. 1967. Taxonomy of Vascular Plants. Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi
2. V.V. Sivarajan. 1999. Introduction to the Principles of Plant Taxonomy. 2<sup>nd</sup>Edn. Oxford & IBH Pub. Co., New Delhi.
3. A.K. Mondal. Advanced Plant Taxonomy. 1975. 2<sup>nd</sup> Edn. New Central Book Agency (P) Ltd. Delhi, India. A.C. Dutta..
4. V.V. Sivarajan. 1999. Introduction to the Principles of Plant Taxonomy. 2<sup>nd</sup>Edn. Oxford & IBH Pub. Co., New Delhi.
5. O. P. Sharma. Plant Taxonomy. 2009. 2<sup>nd</sup> Edn. McGraw-Hill, New York.
6. B.P. Pandey. 1986. Modern Practical Botany. Vol. II. S. Chand & Company (Pvt.) Ltd., New Delhi.
7. H.C. Gangulee, K.S. Das and C. Dutta.1984. College Botany. Vol. I. New Central Book Agency, India.
8. J.W. Purseglove. 1988. Tropical Crops Dicotyledons. English Language Book Society, Longman, London.
9. J.W. Purseglove.1988. Tropical Crops Monocotyledons. English Language Book Society, Longman, London.
10. K.S. Bilgrami, L.M. Srivastava and J.L. Shreemali.1992. Fundamentals of Botany. Vikas Publishing House Pvt. Ltd., New Delhi.
10. L.S. Cobley and W.M. Steele. 1976. An Introduction to the Botany of Tropical Crops. The English Language Book Society, Longman, London.

## Department of Agricultural Chemistry

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hour	Level	Semester
1.	AGCH 425: Agro-Chemicals	2	4	I
	Theory	2		
	<b>Total</b>	<b>2</b>		

<b>Course Code.: AGCH 425</b> <b>Course Title: Agro-Chemicals</b>	<b>Credit Hours: 2</b>	<b>Level: 4</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is design to provide updated knowledge and information related to major agro-chemicals (focused on fertilizers and pesticides) used in Bangladesh for crop production.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Classify different groups of agrochemicals.</li> <li>• Explain the manufacturing processes of different fertilizers.</li> <li>• Summarize the major and commonly used pesticide in Bangladesh in respect of formulation, preparation and mode of action.</li> <li>• Differentiate the process of agro-chemical registration.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Justify the need of agro-chemicals</li> <li>• Classify different groups of agro-chemicals</li> </ul>	<b>Introduction:</b> Concepts of agro-chemicals. Definition, development and classification of agro-chemicals.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Summarize the history of agro-chemicals use in Bangladesh.</li> </ul>	<b>History:</b> Entrance of agro-chemicals in Bangladesh, present status and future predictions.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain and compare different types of pesticide formulations.</li> <li>• Prioritize the choice of different pesticide formulations.</li> </ul>	<b>Pesticide formulation:</b> Chemistry and preparation of dusts, wettable powders, emulsifiable concentrates, granulates, micro-encapsulation, fumigants and aerosol formulations.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the preparation, mode of action of widely used insecticides in Bangladesh.</li> </ul>	<b>Preparation and mode of action of insecticides:</b> Manufacturing/Preparation, properties, mode of action and uses of organ chlorinated, organ phosphorus, organocarbamate insecticides commonly used in Bangladesh.	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Describe the preparation, mode of action of widely used fungicides and herbicides in</li> </ul>	<b>Fungicides and herbicides:</b> Preparation, properties and mode of action of synthetic fungicides and herbicides commonly used in	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report

Bangladesh.	Bangladesh.		
<ul style="list-style-type: none"> <li>Assess the compatibility of pesticides with other agrochemicals.</li> </ul>	<p><b>Compatibility:</b> Define pesticide compatibility, types of compatibility and compatibility test.</p>	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>Summarize the pesticide registration procedure in Bangladesh.</li> </ul>	<p><b>Registration:</b> Authority for registration, national committees related to pesticide registration. Steps and forms to pesticide registration procedure in Bangladesh.</p>	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Classify different types of fertilizers.</li> </ul>	<p><b>Introduction of fertilizer:</b> Definition, development and classification of fertilizers.</p>	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>Justify the different feedstock for urea synthesis</li> <li>Explain different steps of urea manufacturing process.</li> </ul>	<p><b>Nitrogenous fertilizer:</b> Choice and purification of feedstock for urea synthesis. Synthesis of CO<sub>2</sub> and NH<sub>3</sub> from natural gas. Urea manufacturing process.</p>	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Compare different types of phosphatic fertilizers.</li> <li>Explain the manufacturing processes of different phosphatic fertilizers.</li> </ul>	<p><b>Phosphatic fertilizer:</b> Choice and chemical composition of raw material. Manufacturing process of SSP, TSP and DAP fertilizers.</p>	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Discuss different minerology of potash ores.</li> <li>Explain mining and recovery of MoP.</li> </ul>	<p><b>Potassic fertilizer:</b> Minerology of potash ores. Mining and recovery of MoP.</p>	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Apply the use of different secondary and micronutrient containing fertilizers.</li> <li>Evaluate compound, mixing, liquid and controlled- release fertilizers.</li> </ul>	<p><b>Other fertilizers:</b> Secondary and micronutrient fertilizers and their chemistry and technology. Compound mixed, liquid and controlled-release fertilizers, their chemistry and technology.</p>	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>Describe the physical and chemical</li> </ul>	<p><b>Properties of fertilizers:</b> Physical and chemical</p>	Lecture Visual	Quiz/MCQ Short answer



properties of fertilizers	properties of fertilizers. Comparative study and selection of commonly used fertilizers	presentation Discussion	Essay type answer
<ul style="list-style-type: none"> <li>Assess the way to control the quality of fertilizers.</li> <li>Interpret the pollution caused by fertilizer industries.</li> </ul>	<b>Quality control of fertilizers:</b> Quality control and specification of commonly used fertilizers. Pollution caused by fertilizer industries and its control measures.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>Explain the latest research findings and information regarding the application of agro-chemicals.</li> </ul>	<b>Recent information:</b> Latest research findings and information in the field of agro-chemicals.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer

### Reference Books

- Tomlin, C.D.S. (Ed.). 2003. The Pesticide Manual, 13th edition, British Crop Protection Council, Hampshire, UK.
- Ramulu, U.S.S. 1985. Chemistry of Insecticides and Fungicides, 2nd edition. Oxford and IBH Pub. Co., New Delhi. India.
- Ministry of Law and Justice, Govt. of the Peoples Republic of Bangladesh. 1984. The Pesticide Ordinance, Govt. Press. Dhaka.
- Srivastva, S.B. 1985. Agrobased Industries and Pesticides Formulations. S.I.R. Institute, New Delhi. India.
- Gustafson A. F. 2010. Handbook of Fertilizers .Agrobios, India.
- Havlin, J.L.; Beaton, J.D.; Tisdale, S.L. and Nelson, W.L. 1999. Soil Fertility and Fertilizers, 6th edition,. Prentice-Hall, Inc., Upper Saddle River, New Jersey, USA.
- Jain, B.K. and Sivashankaran, V.S. (Eds.) 1980. Handbook on Fertilizer Technology. Fertilizer Association of India, New Delhi-110067, India.
- UNIDO and IFDC (Eds.) 1998. Fertilizer Manual. Kluwer Academic Publishers. Dordrecht, The Netherlands.
- Van Slyke. 2010. Fertilizers and Crop Production. Agrobios, India.

## Department of Agricultural Extension and Information System

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	AEIS 475: Agricultural Extension and Information System (Theory)	3	4	II
2.	AEIS 476: Agricultural Extension and Information System (Practical)	1	4	II
	Theory	3		
	Practical	1		
	<b>Total</b>	<b>4</b>		

<b>Course Code: AEIS 475</b> <b>Course Title : Agricultural Extension and Information System (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 4</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide basic knowledge on agricultural extension education, extension teaching methods, communication, diffusion of innovation and knowledge management in agriculture to improve socio-economic condition of the farming community.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Explain the concepts and philosophies of agricultural extension education,</li> <li>• Describe with extension teaching methods and aids</li> <li>• Demonstrate the process of extension communication</li> <li>• Practice agricultural innovations and knowledge management in agriculture effectively.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to:	<b>Course Content</b>	<b>Teaching-Learning Strategy</b>	<b>Assessment Strategy</b>
<ul style="list-style-type: none"> <li>▪ Describe Concept, scope, principles and philosophies of agricultural extension</li> <li>▪ Explain the development of agricultural extension in Bangladesh and beyond.</li> </ul>	<b>Agricultural Extension:</b> Concept, Scope and Objectives of Agricultural Extension; Principles and Philosophies of Agricultural Extension; Development of agricultural extension work in Bangladesh and beyond; Integrated functions of agricultural education, Research and extension services.	Lecture Discussion Multimedia presentation	Quiz/MCQ Class test Essay type answer
<ul style="list-style-type: none"> <li>▪ Demonstrate teaching methods, their use and effectiveness</li> <li>▪ Apply extension teaching aids and criteria of these aids.</li> <li>▪ Select effective teaching methods by considering factors</li> </ul>	<b>Extension Teaching Methods and Aids:</b> Understanding extension teaching methods; Factors consider in extension teaching methods; Combination of teaching methods; Result demonstration vs. method demonstration; Meaning, types, advantages, disadvantages, and choice of extension teaching aids; Criteria for selection and evaluation of extension teaching aids	Lecture Discussion Multimedia presentation	Quiz/MCQ Class test Essay type answer

<ul style="list-style-type: none"> <li>• Explain model and elements of communication</li> <li>• Describe factors influencing communication</li> <li>• Demonstrate the importance of communication to agricultural development.</li> </ul>	<p><b>Extension Communication:</b>          Concept, scope and importance of communication; Communication models; Barriers and noise of communication; Feedback of communication; Critical factors of extension communication; Communication gap; Types and forms of communication; Communication strategy for agricultural and rural development.</p>	Lecture Discussion Multimedia presentation	Quiz/MCQ Class test Essay type answer
<ul style="list-style-type: none"> <li>▪ Obtain latest information in extension communication and innovation management concept</li> </ul>	<p><b>Transfer of Technologies:</b>          Meaning and definition of technology, diffusion process, elements of diffusion process, innovation-decision process, innovativeness and adapter categories, definition, types and attributes of innovation.</p>	Lecture Discussion Multimedia presentation	Quiz/MCQ Class test Essay type answer
<ul style="list-style-type: none"> <li>▪ Explain the core concepts, methods, techniques and tools of knowledge management.</li> <li>▪ Demonstrate the ability to apply KM solutions to agricultural knowledge acquisition and dissemination.</li> <li>▪ Demonstrate the ability to use IT-based KM tools in agriculture.</li> </ul>	<p><b>Knowledge Management for Agricultural Extension Service:</b>          Concept &amp; foundation; KM solutions; KM models; KM theories; KM impacts; KM &amp; its significance in agricultural development; KM tools for managing knowledge in organization.</p>	Lecture, Discussion, Multimedia presentation	Quiz/MCQ, Class test, Essay type

**Reference Books**

1. M.H. Bhuiyan, M.A.M. Miah, M.G.R. Akanda and M.A. Bashar. 2014. Agricultural Extension Education. G-Science Implementation and publication, Dhaka, Bangladesh.
2. E.M. Rogers. 2003. Diffusion of innovations. Third Edition. The Free Press. New York.
3. G. L. Roy. 2006. Extension Communication and Management. Joy Prakashani. Calcutta, India.
4. Becerra-Fernandez, I. and Sabherwal, R. 2010. Knowledge Management: Systems and Processes, M.E. Sharpe.

<b>Course Code: AEIS 476</b> <b>Course Title : Agricultural Extension and Information System (Practical)</b>		<b>Credit Hour: 1</b>	<b>Level: 4</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide hands-on experience on low cost teaching aid; planning of extension programme; seminar, symposium, workshop and conference; data collection tool and techniques, plan of work and calendar of work.				
<b>Course Learning Outcome:</b>				
<ul style="list-style-type: none"> <li>• Explain the approaches of teaching aids;</li> <li>• Analyse and execute agricultural extension programme and information system;</li> <li>• Describe and organise seminar, symposium, workshop and conference;</li> <li>• Apprehend plan of work and calendar of work;</li> <li>• Operate good speech by microteaching</li> <li>• Able to collect data individually</li> </ul>				
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-Learning Strategy</b>	<b>Assessment Strategy</b>	
<ul style="list-style-type: none"> <li>• Prepare some common visual teaching aids and their use in lecture</li> </ul>	Preparation and use of some selected low cost teaching aids: Poster, Flash Cards, Charts and Graphs	Lecture Discussion Multimedia presentation Assignment	Quiz/MCQ Essay type answer Practical notebook Report Viva voce	
<ul style="list-style-type: none"> <li>• Illustrate the various prospect of agricultural extension programme.</li> <li>• Make a plan on agricultural extension programme</li> <li>• Identify and analyse the problems of stakeholder and development of logical framework.</li> <li>• Implement an agricultural extension programme</li> </ul>	Planning an agricultural extension programme: problem identification, problem, objective, strategy analysis and development of logical framework	Lecture Discussion Multimedia presentation Assignment	Quiz/MCQ Essay type answer Practical notebook Report Viva voce	
<ul style="list-style-type: none"> <li>• Comprehend details about seminar, symposium, workshop and conference.</li> <li>• Acquire practical knowledge on how to conduct about seminar, symposium, workshop and conference.</li> </ul>	Organization of seminar, symposium, workshop and conference	Lecture Discussion Multimedia presentation Assignment	Quiz/MCQ Essay type answer Practical notebook Presentation Viva voce	

<ul style="list-style-type: none"> <li>• Explain the process of microteaching.</li> <li>• Apprehend the time allocation for each segment of presentation.</li> </ul>	Microteaching practice	Lecture Discussion Multimedia presentation Assignment	Quiz/MCQ Essay type answer Practical notebook Presentation Viva voce
<ul style="list-style-type: none"> <li>• Make a plan of work and calendar of work</li> <li>• Prepare and present a plan of work and calendar of work</li> </ul>	Preparation of plan of work and calendar of work	Lecture Discussion Multimedia presentation Assignment	Quiz/MCQ Essay type answer Practical notebook Report Viva voce
<ul style="list-style-type: none"> <li>• After completion of the course the students will be able to-</li> <li>• Understand and apply different instruments for data collection.</li> <li>• Illustrate types and forms of questionnaire.</li> <li>• Prepare a good questionnaire.</li> <li>• Conduct an interview.</li> </ul>	Data collection instruments: preparation of interview schedule and procedure of interviewing	Lecture, Interactive discussion, Role playing, Class room exercise,	Quiz, Class test, Student Attendance, Practical Note Book Writing, Final Exam

### Reference Books

1. Department of Agricultural Extension & Information System 2000. Agricultural Extension practical Manual. AEIS, Sher-e-Bangla Agricultural University.
2. M.H. Bhuiyan, M.A.M. Miah, M.G.R. Akanda and M.A. Bashar. 2014. Agricultural Extension Education. G-Science Implementation and publication, Dhaka, Bangladesh.
3. Instructors will also demonstrate various software applications in the lab. Students are expected to learn, practice and use the software to produce solutions of real-world problems.

## Department of Agronomy

### Course Layout

#### **Bachelor of Science in Agricultural Economics (Hons.)**

<b>Sl. No.</b>	<b>Course Code and Title</b>	<b>Credit Hours</b>	<b>Level</b>	<b>Semester</b>
1.	AGRO 125: Principles of Field Crops Management (Theory)	3	1	I
2.	AGRO 126: Principles of Field Crops Management (Practical)	1	1	I
	Theory	3		
	Practical	1		
	<b>Total</b>	<b>4</b>		

<b>Course Code AGRO 125</b> <b>Course Title: Principles of Field Crops Management (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 1</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide fundamental concepts of Agriculture, Agronomy, and different agronomical practices involved in field crops production, and economic analysis of crop production.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Illustrate Agriculture and Agronomy</li> <li>• Predict land distribution and agro-ecological zones of Bangladesh, and distribution of crops therein</li> <li>• Operate field crops management</li> <li>• Correlate cropping system of Bangladesh</li> <li>• Execute planning, establishment of agricultural farm and its managements</li> <li>• Verify crop performance and crop forecasting</li> <li>• Apply post-harvest operations for field crops</li> <li>• Investigate socio-economic condition of farmers for field crops production</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to	<b>Course Content</b>	<b>Teaching-Learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Explain agriculture, and agronomy</li> <li>• Classify cropping seasons</li> <li>• Locate crop distribution and production</li> </ul>	<b>Introduction:</b> Concept, importance, opportunities, constraints and branches of Agriculture; Definition, importance, scope and basic principles of agronomy; classification of cropping seasons of Bangladesh and influence of seasons on crop distribution and production	Lecture Visual presentation Discussion Group discussion Assignment Feedback	Quiz Short answer Essay type answer Presentation performance Attendance Report
<ul style="list-style-type: none"> <li>• Scrutinize data on land categories and land utilization of Bangladesh</li> </ul>	<b>Land use and crop statistics in Bangladesh:</b> Categories of land utilization, area, production and yield of major crop of Bangladesh and their general trend.	Lecture Visual presentation Discussion Group discussion Assignment Feedback	Quiz Short answer Essay type answer Presentation performance Attendance Report
<ul style="list-style-type: none"> <li>• Identify Agro-ecological zones of Bangladesh and their characteristics</li> </ul>	<b>AEZ:</b> Agro-ecological zones of Bangladesh: Basis, benefit, area, physiography and crop distribution	Lecture Visual presentation Discussion Group discussion Assignment	Quiz Short answer Essay type answer Presentation



		Feedback	performance Attendance Report
<ul style="list-style-type: none"> <li>Classify field crops</li> <li>Predict climate and soil requirements of field crops</li> <li>Recognize scope, limitation and strategies of field crop production</li> <li>Demonstrate crop production technologies</li> </ul>	<b>Production technology of different field crops:</b> <b>Cereal crops:</b> Rice, Wheat and Maize; <b>Pulse crops:</b> Lentil, Mungbean, Grasspea, Chickpea and Blackgram; <b>Oilseed crops:</b> Rapeseed Mustard, Soybean, Sesame; <b>Fiber crops:</b> Jute and Cotton; <b>Sugar crops:</b> Sugarcane, Sugar beet; <b>Beverage crops:</b> Tea; <b>Narcotic crops:</b> Tobacco; <b>Fodder crops:</b> Maize, Sorghum, Cowpea, Napier and Para grass	Lecture Visual presentation Discussion Group discussion Field visit Assignment Feedback	Quiz Short answer Essay type answer Presentation performance Attendance Report
<ul style="list-style-type: none"> <li>Compare cropping system</li> <li>Interpret different cropping system of Bangladesh</li> <li>Design multiple cropping</li> </ul>	<b>Cropping System</b> <ul style="list-style-type: none"> <li>Concept, components classification, objectives, advantages and disadvantages</li> <li>Multiple cropping</li> <li>Crop diversification</li> </ul>	Lecture Visual presentation Discussion Group discussion Assignment Feedback	Quiz Short answer Essay type answer Presentation performance Attendance Report
<ul style="list-style-type: none"> <li>Invent planning, establishment of agricultural farm and its managements</li> </ul>	<b>Farm planning and management:</b> Factors to be considered for establishing a farm. Farm layout, farm budgeting	Lecture Visual presentation Discussion Group discussion Farm visit Assignment Feedback	Quiz Short answer Essay type answer Presentation performance Attendance Report
<ul style="list-style-type: none"> <li>Assess crop performance and estimation its yield for forecasting the seed production after crop cutting</li> <li>Construct crop report</li> </ul>	<b>Crop evaluation:</b> Crop reporting, crop cutting experiment, crop yield estimation and crop forecasting	Lecture Visual presentation Discussion Group discussion Field visit Assignment Feedback	Quiz Short answer Essay type answer Presentation performance Attendance Report

<ul style="list-style-type: none"> <li>Schedule post-harvest operations for field crops</li> </ul>	<p><b>Post-harvest technology</b> Concept, objective and importance, classification and steps of post-harvest operations</p>	<p>Lecture Visual presentation Discussion Group discussion Field visit Processing center visit Assignment Feedback</p>	<p>Quiz Short answer Essay type answer Presentation performance Demonstration performance Attendance Report</p>
<ul style="list-style-type: none"> <li>Investigate socio-economic conditions of farmers for field crops production</li> <li>Criticize market and storage facilities, inputs and credits involved in field crops</li> </ul>	<p><b>Socio-economic condition for crop production</b> Socio-economic condition of the farming community's communication, market and storage facilities, inputs and credits</p>	<p>Lecture Visual presentation Discussion Group discussion Field visit Farm house visit Assignment Feedback</p>	<p>Quiz Short answer Essay type answer Presentation performance Demonstration performance Attendance Report</p>

### Reference Books

- Chandra, G. D. (1997). Fundamentals of Agronomy. Oxford & IBH Publishing Company Private, Limited.
- Debertin, D.L. (2012). Agricultural Production Economics. Pearson Education, the USA.
- Egli, D. B. (2017). Seed biology and yield of grain crops. CABI, the UK.
- Jones, J. J. B. (2002). Agronomic Handbook: Management of Crops, Soils and Their Fertility, CRC Press
- Nath, T.K. and O`Reilly, P. (Eds.). (2016) Monoculture Farming: Global Practices, Ecological Impact and Benefits/Drawbacks. Nova Science Publishers, India.
- Panda, S.C. (2011). Crop Production and Tillage, AGROBIOS Publication, New Delhi, India.
- Panda, S.C. (2014). Agronomy, AGROBIOS Publication, New Delhi, India.
- Reddy, S. R. (2007). Principles of Agronomy. Kalyani Publishers, India
- Srivastava, V.C. (2014). Modern Principles of Agronomy, AGROBIOS (India).

<b>Course Code: AGRO 126</b> <b>Course Title: Principles of Field Crops Management (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 1</b>	<b>Semester: I</b>
<b>Rationale:</b> This course provides practical knowledge on crops, manures & fertilizers, farm implements, seeds, seed testing and crop raising.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Identify crops, farm implements, manures &amp; fertilizers</li> <li>• Perform different intercultural operations</li> <li>• Explain seed and seed technology</li> <li>• Demonstrate field crop raising</li> <li>• Calculate cost of production of field crops</li> <li>• Describe farm records</li> <li>• Investigate farm</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Explain field crops and weeds</li> <li>• Apply manures and fertilizers</li> <li>• Detect agricultural implements and their functions</li> </ul>	Identification of different field crops, weeds, manures and fertilizers, agricultural implements	Lecture Visual presentation Field visit Group discussion Field work Demonstration Feedback	Practical examination Oral examination Demonstration performance Report Class attendance Practical notebook
<ul style="list-style-type: none"> <li>• Identify seed</li> <li>• Classify seed</li> <li>• Differentiate morphology of monocot and dicot seed</li> </ul>	Study of structure of monocotyledonous and dicotyledonous seeds	Lecture Visual presentation Group discussion Demonstration Feedback	Practical examination Oral examination Demonstration performance Report Class attendance Practical notebook
<ul style="list-style-type: none"> <li>• Compute seed germination percentage and seed rate of field crops</li> </ul>	Germination test of seed. Determination of seed rate of field crops	Lecture Visual presentation Field visit Group discussion Field work Demonstration Feedback	Practical examination Oral examination Demonstration performance Report Class attendance Practical notebook
<ul style="list-style-type: none"> <li>• Demonstrate a crop raising</li> <li>• Schedule intercultural operations for crop raising</li> </ul>	Raising a crop in an individual plot, practicing weeding, thinning, mulching, top dressing,	Lecture Visual presentation Field visit Group discussion Field work Demonstration	Practical examination Oral examination Demonstration performance Report Class attendance

<ul style="list-style-type: none"> <li>Perform post-harvest operations of different crops</li> </ul>	harvesting and post-harvest operation of different field seed crops	Feedback	Practical notebook
<ul style="list-style-type: none"> <li>Compute costs of cultivation of different crops</li> </ul>	Computing cost of production of different field crops.	Lecture Group discussion Demonstration Feedback	Practical examination Oral examination Demonstration performance Report Class attendance Practical notebook
<ul style="list-style-type: none"> <li>Construct different farm records</li> <li>Assemble different farm records</li> </ul>	Study on farm records and their maintenance.	Lecture Visual presentation Farm visit Group discussion Field work Demonstration Feedback	Practical examination Oral examination Demonstration performance Report Class attendance Practical notebook
<ul style="list-style-type: none"> <li>Investigate loss profit from crop production</li> </ul>	Visit to a crop production farm	Lecture Visual presentation Farmer house visit Group discussion Field work Demonstration Feedback	Practical examination Oral examination Demonstration performance Report Class attendance Practical notebook

### Reference Books

1. BARI. (2017). Krishi Projukti Hat Boi. Bangladesh Agricultural Research Institute. Joydebpur, Gazipur.
2. BRRI. (2017). AdunikDhanerChash (Modern rice cultivation). 20th edition Booklet no. 5, Bangladesh Rice Res. Inst. Joydebpur, Gazipur
3. Copeland, L.O. (2005). Principles of Seed Science and Technology (4th Ed.). Bargress Publishing Co. Minnesota, USA.
4. Ranaand, S. S., Rana, M. C. (2011). Cropping System. Department of Agronomy, College of Agriculture, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur, India.
5. Sharma, K. (2005). Hand Book of Agriculture. Indian Council of Agricultural Research. New Delhi, India.
6. Singh, S.S. (2008). Principle and Practices of Agronomy. Kalyani Publishers. New Delhi, India
7. Srivastava, V.C. (2014). Modern Principles of Agronomy, AGROBIOS (India).

## Department of Agricultural Engineering

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	AGEN 225: Farm Mechanization (Theory)	2	2	I
2.	AGEN 226: Farm Mechanization (Practical)	1	2	I
3.	AGEN 275: Food Technology (Theory)	2	2	II
4.	AGEN 276: Food Technology (Practical)	1	2	II
	Theory	4		
	Practical	2		
	<b>Total</b>	<b>6</b>		

<b>Course Code: AGEN 225</b> <b>Course Title : Farm Mechanization (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 2</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to develop students' knowledge on important technologies used in the field of Agricultural Engineering for mechanized and modern Agricultural operations.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire knowledge about modern farm technologies and machineries.</li> <li>• Enrich knowledge about the current status, needs and opportunities of mechanized farming.</li> <li>• Develop knowledge on crop water requirement and efficient irrigation technologies.</li> <li>• Become familiar with farm structure design and construction materials for farm structure.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Categorize and criticize the level of Mechanization of Bangladesh.</li> </ul>	<b>Farm Mechanization:</b> Introduction to farm mechanization, benefits and drawbacks of farm mechanization, factors influencing mechanization. Mechanization and poverty alleviation, mechanization and national economy, prospects of farm mechanization in Bangladesh.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Illustrate the type of engine and their working principles.</li> <li>• Compare between two and four stroke engines.</li> <li>• Differentiate between petrol and diesel engines.</li> <li>• Develop knowledge of RM of engines.</li> </ul>	<b>Farm Power:</b> Definition, classification of engines, engine parts, two and four stroke engines, petrol and diesel engines and their working principles and different internal systems in tractors and power tiller engines, repair and maintenance of engines, estimation of power, energy and efficiencies of engines.	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Classify the type of tillage implements and machineries.</li> <li>• Describe tillage implements, sprayers and harvesters and their uses.</li> <li>• Estimate the power, energy and efficiencies of agricultural machineries.</li> </ul>	<p><b>Farm Machinery:</b> Introduction to farm machinery, tillage machinery, crop planting and plant protection machinery, Harvesting and threshing machinery: their operation, performance and maintenance, calculation of soil – implement relation forces, analysis of forces, and estimation of power, energy and efficiencies of machines. Current status and future prospects of farm machinery business in Bangladesh.</p>	<p>Lecture Visual presentation Discussion Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Estimate the machinery operating cost</li> <li>• Determine the time of replacement the machines.</li> </ul>	<p><b>Farm machinery management:</b> Minimizing power and machinery requirements, Annual operating cost of farm machinery, depreciation and machine life, machine safety. Different cost parameters; break-even analysis, determination of annual cost.</p>	<p>Lecture Visual presentation Discussion Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Describe the methods of irrigation.</li> <li>• Estimate the irrigation requirements.</li> <li>• Compare various irrigation technologies.</li> <li>• Estimate the power requirement of pumping and cost of power.</li> <li>• Develop knowledge about RM of irrigation pumps.</li> </ul>	<p><b>Irrigation and Drainage:</b> Importance and scope of Irrigation, irrigation development in Bangladesh. Methods of irrigation and water requirement of crops, Irrigation pumps and wells, their classification, uses, maintenance and troubleshooting, Drainage and its importance in agriculture in Bangladesh, Few constructional estimation.</p>	<p>Lecture Visual presentation Interactive discussion Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

<ul style="list-style-type: none"> <li>• Know about the latest technologies in modern agricultural sectors</li> </ul>	<p><b>Promising new technologies in Agriculture:</b> Introduction with modern farm technologies like computer and electronics in agriculture, precision farming, protected farming, intercropping, drones and robots, developments of modern (Need Based) machineries.</p>	<p>Lecture Visual presentation Discussion Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
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**Reference Books**

1. R. A. Kepner, Roy Bainer and E. L. Barger. Principles of farm machinery.3rd Ed.1987, CBS Publishers & Distributors, New Dellhi 110032. India.
2. A.M. Michael. Irrigation: Theory and Practice, Reprint Ed.1997, Vikas publishing house Pvt. Ltd. New Delhi, India.
3. S. K. Garg, Irrigation Engineering and Hydraulic Structures. 7th Ed. New Delhi: Khanna Publishers.
4. Donnell Hunt, David Wilson. Farm Power and Machinery Management, Eleventh Edition, Iowa State University press, Ames, Iowa 50014, USA.
5. A. M Michael, S. D Khepar, and S. K Sondhi. Water Wells and Pumps, 2<sup>nd</sup> Ed.Published by Tata McGraw – Hill, India.



<b>Course Code: AGEN 226</b> <b>Course Title : Farm Mechanization (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 2</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide students the practical experience of using available machinery or to provide a closer overview of important technologies used in the domain of Agricultural Engineering for mechanized and modern Agricultural operations.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire knowledge on selection of best suited machine or engine and to do proper management and maintenance in practical situations.</li> <li>• Enrich skill on the technique and methods of determining the exact irrigation requirement.</li> <li>• Acquaint with post-harvest care, losses and crop processing technologies.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Identify and use common hand tools.</li> </ul>	Common hands tools.	Lecture Discussion Demonstration Group work	Quiz Short answer Identification Demonstration performance Viva-voce Practical note book
<ul style="list-style-type: none"> <li>• Explain the functions of different parts of engines</li> <li>• Use farm equipment's.</li> </ul>	Different parts of IC engines.	Lecture Discussion Demonstration Group work	Quiz Short answer Identification Demonstration performance Viva-voce Practical note book
<ul style="list-style-type: none"> <li>• Explain the different engine systems of tractor and power tiller.</li> </ul>	Different engine systems of tractor and power tiller.	Lecture Discussion Visual presentation	Quiz Short answer Viva-voce Practical note book
<ul style="list-style-type: none"> <li>• Illustrate the technique of starting different types of engine.</li> </ul>	Starting of different types of internal combustion engine.	Lecture Discussion Demonstration Group work	Demonstration performance

<ul style="list-style-type: none"> <li>• Explain and identify the farm implements, machineries, and dryers.</li> <li>• Describe the suitability of machines in various types of agricultural operations.</li> </ul>	Different farm implements and pre & post-harvest machinery. Components of seed drill machine, Rice Transplanter Reaper, Sprayer and Harvester.	Lecture Discussion Visual presentation	Quiz Short answer Identification Viva-voce Practical note book
<ul style="list-style-type: none"> <li>• Explain and identify the functional components of Power tiller and Tractor,</li> </ul>	Functional components of a power tiller and Tractor	Lecture Discussion Visual presentation	Quiz Short answer Identification Viva-voce Practical note book
<ul style="list-style-type: none"> <li>• Operate and determine the capacity of centrifugal pump.</li> </ul>	Experiment on determination of centrifugal pump capacity.	Lecture Demonstration Group work	Demonstration performance
<ul style="list-style-type: none"> <li>• Operate the power tiller and tractor.</li> </ul>	Field operation of power tiller and tractor with different farm implements and measurement of their field performances.	Lecture Demonstration Group work	Demonstration performance
<ul style="list-style-type: none"> <li>• Explain and identify the irrigation pumps suitable for the field.</li> </ul>	Different irrigation water pumps/lift		
<ul style="list-style-type: none"> <li>• Justify the field of farm machinery available for agricultural operations.</li> <li>• Observe modern agricultural machineries using in agricultural field.</li> </ul>	Visit to ideal agricultural engineering farms, research institutes (BARI, BRRI, and BADC) and farm machinery manufacturing industries.	Visiting the related organization.	Report

### Reference Books

1. J. M. Shippen, C. R. Ellin and C. H. Clover. Basic Farm Machinery, 3rd Ed. 1980, Published by Pergamon Press Oxford, UK
2. A. M. Michael. Irrigation: Theory and Practice, Reprint Ed. 1997, Vikas publishing house Pvt. Ltd. New Delhi, India.
3. ÒLv̄gvi hšçcvwZ (ḡvbyqvj)Ó, 1988. Published by Department of Agricultural Extension, Ministry of Agriculture, Bangladesh
4. Study guide, lecture sheet and leaflets.
5. <https://www.youtube.com/TheAutoPartsShop>

<b>Course Code: AGEN 275</b> <b>Course Title : Food Technology (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 2</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to develop knowledge on important technologies used in the field of Food Processing systems			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire knowledge about modern techniques of food preservation.</li> <li>• Enrich knowledge and skill about the current status, needs and opportunities in food processing industries.</li> <li>• Develop knowledge on quality assessment of food.</li> <li>• Gather knowledge on post-harvest losses, storage, processing and preservation technologies of food products.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Categorize and criticize the food science and food technology related issues.</li> </ul>	<b>Introduction to Food Science and Technology</b> Definition of foods, food science and food technology, Food composition and their functions; Classification of foods based on origin, functions, PH/acidity and perishability; Calorific value of food stuffs, Causes of spoilage of food; Areas of food science and food technology, Roles of food scientists and food technologists.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Describe the type microorganisms</li> <li>• Relate the relation between MO and food</li> <li>• Explain the effects of MO in human health.</li> </ul>	<b>Food and Microorganisms</b> Importance of Microorganisms in Foods; Bacterial growth curve; Combined effects of factors (pH, water activity, temperature, etc.) affecting microbial growth; Food poisonings, infections, intoxications and food-borne diseases.	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Explain the techniques of preservation.</li> <li>• Illustrate different thermal treatments.</li> <li>• Describe the problems related to long term preservation.</li> </ul>	<p><b>Thermal Processing and Preservation of food:</b> Principle of sterilization, Pasteurization, Irradiation and Blanching operations and their methods; Principle of Chilling, Refrigeration, Freezing and Thawing operations and their methods; Canning of Foods; Various types of Dryers and Evaporators and their functions; Problems on Food drying; Objectives of commercial food preservation; Principles and methods of food preservation</p>	<p>Lecture Visual presentation Discussion Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Predict the shelf-life of agricultural products.</li> <li>• Compare between different processing technologies.</li> <li>• Acquire knowledge of processing.</li> <li>• Design a structural layout of a food processing line.</li> <li>• Estimate moisture content and drying time for mechanical dryers.</li> </ul>	<p><b>Food Storage and Manufacturing Technology:</b> Postharvest handling, storage and processing of various perishable crops, manufacturing and processing of soft drinks, baked products, fermented foods, tea-coffee and chocolate products; Site selection and layout of food plant, productivity and profitability, cost analysis.</p>	<p>Lecture Visual presentation Discussion Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Describe the methods of food packaging.</li> <li>• Develop knowledge about packaging materials.</li> </ul>	<p><b>Packaging of Food Products</b> Function of packages, types of packaging materials, criteria for selecting a packaging material; Principles of Aseptic packaging.</p>	<p>Lecture Visual presentation Interactive discussion Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

<ul style="list-style-type: none"> <li>• Select and evaluate the quality parameters of food.</li> <li>• Develop knowledge about adulteration and misbranding.</li> <li>• Determine the critical control point of food processing line.</li> </ul>	<p><b>Quality Control of Foods</b>  Definition of quality, quality control, Quality assurance; Food adulteration and misbranding, Quality attributes of food products; Hazard analysis and critical control points (HACCP), determination of CCPS, food regulation and compliance.</p>	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report
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**Reference Books**

1. Amalendu Chakraverty, Arun S. Mujumdar, Hosahalli S. Ramaswamy. Handbook of Postharvest Technology: Cereals, Fruits, Vegetables, Tea, and Spices. 2003, Published by CRC Press. England.
2. Potter, Norman N., Hotchkiss, Joseph. Food Science. 5th Ed. 1998, Aspen Publishers, Inc. Gaithersburg, Maryland.
3. R. Paul Singh., Dennis R. Heldman. Introduction to Food Engineering. 5th Ed. 2014, Academic Press, ELSEVIER Inc.
4. William C Frazier., Dennis C Westhoff. Food Microbiology. 4th Ed. 1978, Tata McGraw-Hill Publishing Company, New Delhi. India.
5. Heldman, Dennis R. and R. Paul Singh. Food Process Engineering, 2<sup>nd</sup> Ed. 1981, AVI Publishers Co., New York. USA

<b>Course Code: AGEN 276</b> <b>Course Title: Food Technology (Practical)</b>		<b>Credit Hour: 1</b>	<b>Level: 2</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide students the practical experience of using available machinery or to provide a closer overview of important technologies used in the domain of food preservation and processing operations.				
<b>Course Learning Outcomes:</b>				
<ul style="list-style-type: none"> <li>• Acquire knowledge on selection of best suited technique in food processing.</li> <li>• Enrich knowledge and skill on the technique and methods of food preservation.</li> </ul>				
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>	
<ul style="list-style-type: none"> <li>• Identify and use common processing machines.</li> </ul>	Orientation with various machineries and equipment's used in food processing, preservation and analysis	Lecture Discussion Demonstration Group work	Quiz Short answer Identification Demonstration performance Viva-voce Practical note book	
<ul style="list-style-type: none"> <li>• Analyze the compositional elements of food.</li> </ul>	Proximate composition analysis of foods	Lecture Discussion Demonstration Group work	Quiz Short answer Identification Demonstration performance Viva-voce Practical note book	
<ul style="list-style-type: none"> <li>• Apply and explain the technique of Drying and Freezing.</li> </ul>	Preservation of fruits and vegetables by drying and freezing	Lecture Discussion Visual presentation	Quiz Short answer Viva-voce Practical note book	
<ul style="list-style-type: none"> <li>• Apply and explain the technique of Canning</li> </ul>	Canning of fruits, vegetables and fish.	Lecture Discussion Demonstration Group work	Demonstration performance	
<ul style="list-style-type: none"> <li>• Explain the processing technique of Jelly, Marmalade, Cordial and Squash</li> </ul>	Preparation of Jam, Jelly, Marmalade, Cordial and Squash from different fruits.	Lecture Discussion Visual presentation	Quiz Short answer Viva-voce Practical note book	

<ul style="list-style-type: none"> <li>Apply and explain the technique of Chutney and Pickles processing.</li> </ul>	Preparation of chutney and pickles from fruits and vegetables.	Lecture Discussion Visual presentation	Quiz Short answer Identification Viva-voce Practical note book
<ul style="list-style-type: none"> <li>Prepare Ketchup and Sauces</li> </ul>	Preparation of ketchup and sauces from different vegetables and spices	Lecture Demonstration Group work	Demonstration performance
<ul style="list-style-type: none"> <li>Prepare Ice cream, Yoghurt, Tofu and Soya milk</li> </ul>	Preparation of ice cream, yoghurt, tofu and soya milk.	Lecture Demonstration Group work	Demonstration performance
<ul style="list-style-type: none"> <li>Show and explain the technique of Baking.</li> </ul>	Manufacture of Bakery Products: Biscuits and cakes	Lecture Demonstration Group work	Demonstration performance
<ul style="list-style-type: none"> <li>Show and explain the technique of Candy and Chanachur preparation.</li> </ul>	Preparation of candy and chanachur.	Lecture Demonstration Group work	Demonstration performance
<ul style="list-style-type: none"> <li>Justify the scope of food processing.</li> <li>Observe modern Food Processing Industries</li> </ul>	Visit to food industries, BARI, BIRRI and BADC.	Visiting the related organization.	Report

### Reference Books

- Amalendu Chakraverty, Arun S. Mujumdar, Hosahalli S. Ramaswamy. Handbook of Postharvest Technology: Cereals, Fruits, Vegetables, Tea, and Spices. 2003, Published by CRC Press .England.
- Potter, Norman N., Hotchkiss, Joseph .Food Science. 5th Ed.1998, Aspen Publishers, Inc. Gaithersburg, Maryland.
- R. Paul Singh., Dennis R. Heldman. Introduction to Food Engineering. 5th Ed.2014, Academic Press, ELSEVIER Inc.
- Study guide, lecture sheet and leaflets.

## Department of Entomology

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	ENTO 275: Crop Protection-I (Theory)	2	2	II
2.	ENTO 276: Crop Protection-I (Practical)	1	2	II
	Theory	2		
	Practical	1		
	<b>Total</b>	<b>3</b>		



<b>Course Code: ENTO 275</b> <b>Course Title: Crop Protection-I (Theory)</b>		<b>Credit Hour: 2</b>	<b>Level: 2</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide knowledge on introduction to agricultural crop pests, vertebrate pests, storage pests, beneficial insects in agriculture and concept of pest management				
<b>Course Learning Outcomes:</b>				
<ul style="list-style-type: none"> <li>Analyze the importance of insects and mites in agriculture</li> <li>Illustrate different crop pests, vertebrate pests, storage pests and their nature of damage with appropriate control measures</li> <li>Apply of pest management strategies along with pesticide registration and marketing in Bangladesh</li> <li>Infer on beneficial insects and their utilization.</li> </ul>				
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>	
<ul style="list-style-type: none"> <li>Classify and point out the distinguish characteristics of different arthropods</li> <li>Explain the harmful and beneficial aspects of insects</li> </ul>	<b>Introduction:</b> Importance of insects and mites in agricultural and other aspects, classification of insects and mites, pests; their injuries and damages.	Lecture Discussion Visual presentation	Quiz/MCQ Short answer Essay type answer	
<ul style="list-style-type: none"> <li>Describe the biology and host preference of different crop pests</li> <li>Identify and demonstrate nature of damage of different crop pests</li> <li>Prescribe different management strategies</li> </ul>	<b>Crop Pests:</b> Important insect and mite pests of different agricultural crops and their management.	Lecture Discussion Multimedia presentation Field visit	Quiz/MCQ Short answer Essay type answer	
<ul style="list-style-type: none"> <li>Identify different vertebrate pests</li> <li>Recognize their nature of damage including signs</li> <li>Prescribe different management strategies</li> </ul>	<b>Vertebrate Pests:</b> Important vertebrate pests and their management.	Lecture Discussion Multimedia presentation Field visit Assignment	Quiz/MCQ Short answer Essay type answer Report	

<ul style="list-style-type: none"> <li>• Describe the biology and host preference of different stored grain pests</li> <li>• Identify and demonstrate nature of damage of different stored grain pests</li> <li>• Prescribe different management strategies</li> </ul>	<p><b>Storage Pests:</b> Important storage pests and their management.</p>	<p>Lecture Discussion Visual presentation Industry visit</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>▪ Identify pollinators, predators and parasitoids for eco-friendly management of pest insects</li> <li>▪ Describe the rearing techniques of different industrial insects and their significance in agriculture</li> </ul>	<p><b>Beneficial Insects:</b> Pollinators, predators, parasitoids and industrial insects.</p>	<p>Lecture Discussion Visual presentation Industry visit Report writing</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>▪ Explain different control methods</li> <li>▪ Describe pesticides registration and marketing.</li> <li>▪ Identify different group of pesticides and their safety measures</li> </ul>	<p><b>Concept of Pest Management:</b> Outlines of different control methods, integrated pest management (IPM). Pesticides registration and marketing in Bangladesh. Major groups of pesticides, formulation, mode of action, application technique, pesticide handling and safety measures, pesticides residues.</p>	<p>Lecture Discussion Visual presentation Field visit Report writing</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

### Reference Books

1. A. D. Imms. 1965. A General Text Book of Entomology. The English Language Book Society, UK.
2. D.B. Tembore. 1984. A Text Book of Insect Morphology, Physiology and Endocrinology. S. Chand and Co. Ltd., Ramnagar, New Delhi.
3. D.S. Hill. 1987. Agricultural Insect Pests of the Tropics and Their Control. Cambridge University Press, New York, USA.
4. D.S. Hill. 1990. Pests of the Stored Products and Their Control. CBS Publishers and Distributors, Delhi, India.
5. E.H. Smith and D. Pimentel. 1978. Pest Control Strategies. Academic Press Inc., New York.
6. M.M. Trigunayat. 2009. A Manual of Practical Entomology. 2<sup>nd</sup> Edition. Scientific Publishers, Jodhpur, India.
7. P.J. Gullan and P.S. Cranston. 2014. The Insects: An Outline of Entomology. 5<sup>th</sup> Edition., John Wiley and Sons Ltd, UK.

<b>Course Code: ENTO 276</b> <b>Course Title: Crop Protection-I (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 2</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide students' knowledge on external morphology of typical insect, commonly used pesticides in Bangladesh, pesticide appliances, identification of insect and mite pests of major crops, vertebrate pests, storage pests, beneficial insects in agriculture and concept of pest management			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Sketch the basic structures of an insect;</li> <li>• Identify different crop pests, vertebrate pests, storage pests and their nature of damage with appropriate control measures;</li> <li>• Handle and use different pesticide appliances;</li> <li>• Identify beneficial insects and utilize them.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Draw and illustrate the basic structures of an insect</li> </ul>	External morphology of an insect	Lecture Discussion Visual presentation Demonstration	Quiz/MCQ Short answer Practical notebook Viva-voce
<ul style="list-style-type: none"> <li>• Classify the pesticides on different aspects (mode of action, mode of entry, formulation etc.)</li> </ul>	Commonly used pesticides in Bangladesh	Lecture Discussion Pesticide industry visit Report writing	Quiz/MCQ Short answer Practical notebook Viva-voce Report
<ul style="list-style-type: none"> <li>• Recognize and implement the different pesticide appliances</li> </ul>	Pesticide appliances and their usages.	Lecture Discussion Demonstration	Quiz/MCQ Short answer Practical notebook Viva-voce Demonstration performance
<ul style="list-style-type: none"> <li>• Illustrate the biology and assess the host preference of different crop pests</li> <li>• Identify and demonstrate nature of damage of different crop pests</li> <li>• Prescribe different management strategies</li> </ul>	<b>Crop Pests:</b> Important insect and mite pests of different agricultural crops (rice, jute, sugarcane, cotton, oil-seed, vegetable and fruits) and their management.	Lecture Discussion Visual presentation Field visit Demonstration	Quiz/MCQ Short answer Practical notebook Viva-voce Report

<ul style="list-style-type: none"> <li>• Identify different vertebrate pests</li> <li>• Recognize their nature of damage including signs</li> <li>• Design different pest management strategies</li> </ul>	<p><b>Vertebrate Pests:</b> Important vertebrate pests and their management.</p>	<p>Lecture Discussion Visual presentation Field visit Demonstration</p>	<p>Quiz/MCQ Short answer Practical notebook Viva-voce Report</p>
<ul style="list-style-type: none"> <li>• Mention the biology and host preference of different stored grain pests</li> <li>• Identify and demonstrate nature of damage of different stored grain pests</li> <li>• Apply insect management strategies for insect control</li> </ul>	<p><b>Storage Pests:</b> Important storage pests and their management.</p>	<p>Lecture Discussion Visual presentation Lab exercise Industry visit</p>	<p>Quiz/MCQ Short answer Practical notebook Viva-voce Report</p>
<ul style="list-style-type: none"> <li>▪ Identify pollinators, predators and parasitoids for eco-friendly management of pest insects</li> <li>▪ Explain and demonstrate the rearing techniques of different industrial insects and their significance in agriculture</li> </ul>	<p><b>Beneficial Insects:</b> Pollinators, predators, parasitoids and industrial insects.</p>	<p>Lecture Discussion Visual presentation Industry visit</p>	<p>Quiz/MCQ Short answer Practical notebook Viva-voce Report</p>

**Reference Books**

1. A. D. Imms. 1965. A General Text Book of Entomology. The English Language Book Society, UK.
2. D.B. Tembore. 1984. A Text Book of Insect Morphology, Physiology and Endocrinology. S. Chand and Co. Ltd., Ramnagar, New Delhi.
3. D.S. Hill. 1987. Agricultural Insect Pests of the Tropics and Their Control. Cambridge University Press, New York, USA.
4. D.S. Hill. 1990. Pests of the Stored Products and Their Control. CBS Publishers and Distributors, Delhi, India.
5. E.H. Smith and D. Pimentel. 1978. Pest Control Strategies. Academic Press Inc., New York.
6. M.M. Trigunayat. 2009. A Manual of Practical Entomology. 2<sup>nd</sup> Edition. Scientific Publishers, Jodhpur, India.
7. P.J. Gullan and P.S. Cranston. 2014. The Insects: An Outline of Entomology. 5<sup>th</sup> Edition,, John Wiley and Sons Ltd, UK.

## Department of Genetics and Plant Breeding

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	GEPB 375: Crop Plant Improvement	2	3	II
	Theory	2		
	<b>Total</b>	<b>2</b>		

<b>Course Code: GEPB 375</b> <b>Course Title: Crop Plant Improvement (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 3</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is designed to provide basic and applied knowledge about Plant Breeding in relation to improvement of agronomic and economic traits of the crops.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Explain the scope and aims and evolutionary aspects of Plant Breeding.</li> <li>• Narrate genetic makeup, behavior and consequence of self- and cross-pollinated crop plants.</li> <li>• Describe the different breeding methods of self- and cross-pollinated as well as asexually propagated crops.</li> <li>• Explain the special breeding methods like polyploidy breeding and mutation breeding.</li> <li>• Describe the role of biotechnology in crop improvement and crop variety release procedure.</li> <li>• Express the views on plant genetic resources, their use, management and intellectual property rights.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Interpret the scope and area of plant breeding.</li> <li>• Narrate the strategy and goal of plant breeding.</li> </ul>	Scope and goal of plant breeding.	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Explain the location of genes in chromosomes.</li> <li>• Constitute the physical basis of heredity.</li> <li>• Describe the basic physical and functional unit of heredity.</li> <li>• State the set of rules by which information encoded within genetic material (DNA or mRNA sequences).</li> </ul>	Inheritance pattern in crops: Chromosome, gene, heredity.	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Describe modes of asexual and sexual reproduction.</li> <li>• Explain self and cross pollination, their mechanisms and genetic consequences.</li> <li>• Explain self-incompatibility and male sterility and its usage in crop improvement.</li> <li>• Define of genetic resources (germplasm) and their types.</li> <li>• Explain different activities of germplasm conservation.</li> </ul>	Modes of reproduction and pollination control: Modes of reproduction, modes of pollination, mechanism of pollination control in crop plants and their consequences. Genetic resources activities.	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer

<ul style="list-style-type: none"> <li>• Write down the concept of plant introduction.</li> <li>• Describe the procedure of plant introduction.</li> <li>• Explain acclimatization, purpose and importance of plant introduction with their advantages and disadvantages.</li> </ul>	Plant introduction and acclimatization: The concept, process of plant introduction, acclimatization, purpose and importance of plant introduction.	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Describe procedure of mass selection, pure line selection, pedigree breeding, bulk breeding, single seed descent breeding methods with reference to particular crop</li> <li>• Illustrate the procedure of doubled haploid and back cross breeding methods with reference to particular crop.</li> <li>• Write advantages and disadvantages of these procedures.</li> <li>• Compare and contrast among different breeding methods used for self-pollinated crops.</li> </ul>	Breeding self-pollinated crops: Mass selection, pure line selection, pedigree breeding, bulk breeding, single seed descent method, doubled haploid method and back cross method	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Explain different procedures of population improvement.</li> <li>• Write development procedures of synthetic and composite variety.</li> <li>• Compare and contrast among different breeding methods used for cross pollinated crops.</li> </ul>	Breeding cross-pollinated crops: Population improvement, development of composite and synthetic variety.	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Explain characteristics of asexually propagated crops.</li> <li>• Describe selection procedure and hybridization of clonal crops.</li> </ul>	Breeding asexual propagated crops: Clonal selection, hybridization of clonal crops.	Lecture Visual presentation Discussion Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Illustrate mutation breeding method with their applications in crop improvement.</li> <li>• Explain origin and role of auto- and allo-polyploidy in agriculture.</li> </ul>	Mutation and polyploidy in crop improvement.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain the various techniques of biotechnology used in crop improvements.</li> </ul>	Biotechnology in crop improvement.	Lecture Visual presentation	Quiz/MCQ Short answer Essay type

		Discussion	answer
<ul style="list-style-type: none"> <li>Describe the breeding procedure of hybrid development of e.g. Rice, Maize, Tomato, Cucurbits, Radish.</li> </ul>	Development of hybrid varieties in crops: Rice, Maize, Tomato, Cucurbits, Radish.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>Describe varieties and cultivars.</li> <li>Explain procedure of release of notified and non-notified crops.</li> </ul>	Release of variety: Varieties and cultivars, Procedure of release of notified and non-notified crop.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>Describe different kinds of seeds and seed production practices.</li> <li>Explain control of seed quality, seed processing, storage, distribution and maintenance of crop varieties.</li> </ul>	Seed production and maintenance breeding: Kinds of seeds and seed production practices, control of seed quality, seed processing, storage and distribution, maintenance of crop varieties.	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>Define IPR and classification of IPR.</li> <li>Criticize the policies and procedures of IPR.</li> </ul>	Intellectual property rights (IPR)	Lecture Visual presentation Discussion	Quiz/MCQ Short answer Essay type answer

### Reference Books

- Singh, B.D. 2006. Plant Breeding-Principles and Methods. 7<sup>th</sup> Edn. Kalyani Publishers., New Delhi.
- Poehlman, J.M. and Sleper, D.A. 2006. Breeding Field Crops. 5<sup>th</sup> Edn. Iowa State University Press /Ames. USA.
- Breeding of Field & Horticultural Crops. 2014. ICAR. India.
- Singh, P. and Narayanam, S.S. 2009. Biometrical Techniques in Plant Breeding. Kalyani Publishers., New Delhi.
- Parakhia, M.V., Tomar, R.S., Patel, S. and Golakiya, B.A. 2010. Molecular Biology and Biotechnology-Microbial methods. New India Publishing Agency. New Delhi.
- Chopra, V.L. 1989. Plant Breeding- Theory and practice. 1989. Oxford & IBH Publishing Company.
- Allard, R.W. 1999 Principles of Plant Breeding. John Wiley & Sons.
- Acquaah, G. 2012. Principles of plant genetics and breeding. 2<sup>nd</sup> Edn. John Wiley & Sons.



## Department of Horticulture

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No	Course Code and Title	Credit Hours	Level	Semester
1.	HORT 175:Principles of Horticultural Crop Management (Theory)	3	1	II
2.	HORT 176: Principles of Horticultural Crop Management (Practical)	1	1	II
	Theory	3		
	Practical	1		
	<b>Total</b>	<b>4</b>		

<b>Course Code: HORT 175</b> <b>Course Title: Principles of Horticultural Crop Management (Theory)</b>	<b>Credit Hour: 3</b>	<b>Level: 1</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide applied knowledge about horticultural crop management.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Generalize the concept of horticultural crop management and practices</li> <li>• Explain the horticultural crop production, applications and their importance</li> <li>• Optimize crop production by using improved technology</li> <li>• Conceptualize about marketing and storage technology used in horticultural crops</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Generalize horticulture, scope and its importance.</li> <li>• Classify horticultural crops</li> </ul>	<b>Introduction to Horticulture:</b> Scope, importance and classification of horticultural crops.	Lecture Discussion Presentation	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Summarize importance and morphology of flower</li> <li>• Articulate cultivation techniques of flower plants</li> <li>• Predict the marketing system of major flowers.</li> </ul>	<b>Major flower:</b> Importance, morphology cultivation techniques and marketing system of some major flowers like as rose, marigold, tuberose, gladilous and orchid.	Lecture Discussion Multimedia presentation	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Clarify importance and morphology of vegetable crops</li> <li>• Illustrate the cultivation techniques of vegetable crops</li> <li>• Sketch the marketing system of major vegetables</li> </ul>	<b>Major vegetable:</b> Importance, morphology cultivation techniques and marketing system of some major vegetables like as potato, tomato, brinjal, pumpkin, cucurbit, cauliflower and bean.	Lecture Discussion Multimedia presentation	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain the importance and morphology of spice and condiments</li> <li>• Describe the cultivation techniques of spice and</li> </ul>	<b>Major spice and condiments:</b> Importance, morphology cultivation techniques and marketing system of some major	Lecture Discussion Multimedia presentation	Quiz/MCQ Short answer Essay type answer

condiments <ul style="list-style-type: none"> <li>Outline the marketing system of major spice and condiments</li> </ul>	spices and condiments like as coriander, garlic, onion, turmeric, ginger and chilli.		
<ul style="list-style-type: none"> <li>Discuss importance and morphology of fruit crops</li> <li>Perform the cultivation techniques of fruit crops</li> <li>Execute the marketing system of major fruit crops.</li> </ul>	<b>Major fruit:</b> Importance, morphology, cultivation techniques and marketing system of the some major fruits like as banana, pineapple, mango, jack fruit and papaya.	Lecture Discussion Multimedia presentation	Quiz/MCQ Short answer Essay type answer

### Reference Books

- Larson, R. A. 2004. Introduction to Floriculture, 2<sup>nd</sup> edition, North Carolina State University, North Carolina.
- Bose, T. K. and B. Chowdhury. 1991. Tropical Garden plants in Color. Horticulture & Allied publishers, Calcutta, India.
- Hartmann, H. T.; E. Kester and F. T. Davis. 1990. Plant propagation principle and practices. Prentice- Hall, International Editions.
- Mondal, M. F. 2000. Nursery and plant propagation (in Bangla) Mrs. Afia Mondal, BAU campus, Mymensingh.
- Amin, M. R. 1999. Names of Garden plants. B. Akter, 154, Aga-Sadek Road, Dhaka-2.
- Bose, T. K.; R. Maiti; S. Dhua and P. Das. 1999. Floriculture & Landscaping. Naya prokash, Calcutta.
- Pruthi, J.S. 1986. Spices and condiments. National Book Trust, New Delhi.
- Purseglove, J. W. E; G. Brown; C. L. Green and S.R.J. Robbins. 1981. Spices, Boll & Longman Group Uk Ltd. London.
- Rashid, M. A and D. P. Singh. 2000. A Manual on Vegetable Seed production in Bangladesh. AVRDC-USAID-Bangladesh project, BARI, Joydebpur.

<b>Course Code: HORT 176</b> <b>Course Title: Principles of Horticultural Crop Management (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 1</b>	<b>Semester: II</b>
<b>Rationale:</b> This course is designed to provide applied knowledge on horticultural crop management.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Identify the different horticultural tools, flowers, vegetables, spices and fruit plants</li> <li>• Describe different propagation techniques of flower &amp; fruit crops</li> <li>• Acquaint with flower and ornamental plants and their various uses</li> <li>• Estimate seed rate, seedling and fertilizer requirement for vegetables and spices</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
Recognize and apply common garden horticultural tools	Identification of horticultural tools	Lecture Discussion, Demonstration, Field visit	Quiz/MCQ Short answer Identification Viva voce
Identify seeds, flowers and common ornamental plants	Identification of seeds, flowers and common ornamental plants	Lecture Discussion Demonstration Seed album preparation Field visit	Quiz/MCQ Short answer Identification Seed/flower album Viva voce
Practice different propagation techniques for ornamental plants	Propagation technique of rose plants by T-budding	Lecture Discussion Demonstration Practical note book preparation	Quiz/MCQ Short answer Demonstration performance Practical note book Viva voce
Calculate the seed rate, seedling and fertilizer requirement for vegetables and spices	Estimation of seed rate, seedlings, seedbed and fertilizer doses for different vegetable crops	Lecture Discussion Practice calculation Practical note book preparation	Quiz/MCQ Short answer Calculation Practical note book Viva voce
Identify seeds of vegetable and spices crops	Identification of common vegetable seeds and spices	Lecture Discussion Demonstration Spice album preparation Field visit	Quiz/MCQ Short answer Identification Spices and condiments album Practical note book Viva voce

Identify common fruit plants	Identification of common fruit plants	Lecture Discussion Demonstration Field visit	Quiz/MCQ Short answer Identification Practical note book Viva voce
Perform seedbed preparation and raising of seedlings	Preparation of seedbed and raising of seedling of horticultural crops	Lecture Discussion Practice seed bed preparation Practical note book preparation	Quiz/MCQ Short answer Demonstration performance Practical note book Viva voce
Estimate the cost and benefit for vegetables and spices production	Estimation of cost of production and economic return of some product	Lecture Discussion Practice calculation Practical note book preparation	Quiz/MCQ Short answer Calculation Practical note book Viva voce
Perform veneer grafting in mango fruit plant	Propagation practice of veneer grafting in mango plant	Lecture Discussion Demonstration Practical note book preparation	Quiz/MCQ Short answer Demonstration performance Practical note book Viva voce

### Reference Books

1. Larson, R. A. 2004. Introduction to Floriculture, 2<sup>nd</sup> edition, North Carolina State University, North Carolina.
2. Bose, T.K. and B. Chowdhury. 1991. Tropical Garden plants in Color. Horticulture & Allied publishers, Calcutta, India.
3. Hartmann, H. T.; E. Kester and F. T. Davis. 1990. Plant propagation principle and practices. Prentice- Hall, International Editions.
4. Mondal, M. F. 2000. Nursery and plant propagation (in Bangla) Mrs. Afia Mondal, BAU campus, Mymensingh.
5. Amin, M. R. 1999. Names of Garden plants. B. Akter, 154, Aga-Sadek Road, Dhaka-2.
6. Bose, T.K.; R. Maiti; S. Dhua and P. Das. 1999. Floriculture & Landscaping. Naya prokash, Calcutta.
7. Pruthi, J. S. 1986. Spices and condiments. National Book Trust, New Delhi.
8. Purseglove, J. W. E.; G. Brown, C. L. Green and S.R.J. Robbins. 1981. Spices, Boll & Longman Group UK Ltd. London.
9. Rashid, M. A. and D. P. Singh. 2000. A Manual on Vegetable Seed production in Bangladesh. AVRDC-USAID-Bangladesh project, BARI, Joydebpur.

## Department of Language

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	ENGL 125: Basic English (Theory)	2	1	I
2.	ENGL 126: Basic English (Practical)	1	1	I
	Theory	2		
	Practical	1		
	<b>Total</b>	<b>3</b>		

<b>Course Code: ENGL 125</b> <b>Course Title: Basic English (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 1</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to make students develop their basic as well as communicating skills in English language in both academic and practical life.			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Make students attain basic competence in English language that includes all the four skills i.e. listening, speaking, reading and writing</li> <li>• Improve grammatical knowledge and vocabulary</li> <li>• Emphasize particular focus on writing skills</li> <li>• Prepare students competent in communicative skills</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to -	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Communicate with English speakers properly and contact without inhibition</li> <li>• Perform according to the technique of listening</li> </ul>	<b>Listening</b> - Listening to isolated words, utterances; listening to connected speech	Lecture Discussion Classroom instruction (participatory) Group works Pair works using audio cassettes of pronunciation regarding course book	Quiz/MCQ Short answer Essay type answer Oral test Class attendance
<ul style="list-style-type: none"> <li>• Communicate fluently with correct pronunciation and without grammatical mistakes</li> <li>• Construct W/H questions</li> <li>• Perform better in speech delivery</li> </ul>	<b>Speaking</b> - Functions (practical usage e.g. agreement, disagreement, order, request, apology); dialogues; story telling	Lecture Discussion Classroom instruction (participatory) Multimedia Group works Pair works	Quiz/MCQ Short answer Essay type answer Oral test Debate performance Role play Class attendance
<ul style="list-style-type: none"> <li>• Join sentences and construct sentences according to different grammatical context</li> <li>• Explain both academic and nonacademic reading in time constraint</li> <li>• Predict information by</li> </ul>	<b>Reading</b> - Reading for specific information, general information, text organization, grammar in context, subject-verb agreement, sentence structures, modals, conditionals, degree of comparison, knowing	Lecture Discussion Classroom instruction (critical thinking) Self-study Multimedia presentation	Quiz/MCQ Short answer Essay type answer Class attendance

using different types of reading strategy	vocabulary items: technical words, confusing foreign words and phrases, British and American words, apostrophes, prefix, suffix, preposition, phrasal verbs, conditional sentences, homophones, homograph	Group works Pair works	
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### Reference Books

1. D. Hopkins and P. Cullen. 2007. Cambridge Grammar for IELTS. Cambridge University Press, Cambridge.
2. A. Mountford. 1995. English in Agriculture. 8<sup>th</sup>Edn. Oxford University Press, Oxford.
3. M. Maniruzzman. 2002. Basic English Language Skills. Friends Book Corner, Dhaka.
4. J. Seely. 2005. Oxford Guide to Effective Writing and Speaking. 2<sup>nd</sup> Edn. Oxford University Press, Oxford.
5. A.M. Pyle and M.E. Munoz. 1995. CLIFFS TOEFL Preparation Guide. 4<sup>th</sup> Edn. Cliffs Cassettes Publication.
6. R.R. Jordan. 1986. Academic Writing Course. Collins Publication.
7. Q.M. Billah, G.S. Chowdhury and M. Alam. 2005. Foundation English for Undergraduates. 2<sup>nd</sup> Edn. Friends Publication, Dhaka.
8. Sheikh Mujibor Rahman. 2016. The Unfinished Memoirs. 2<sup>nd</sup> Edn. University Press Limited, Dhaka.
9. A.S. Hornby. 2010. Oxford Advanced Learners Dictionary. 7<sup>th</sup> Edn. Oxford University Press, Oxford.
10. D. Hopkins and M. Nettle. 2006. Passport to IELTS. New Revised Edn. Pearson Education Limited.
11. Barry and S. MaCarter. 2007. Improve your IELTS: Listening and Speaking Skills. Macmillan Education, Towns Road, Oxford.
12. J.D. O’Conner. 1980. Better English Pronunciation. 2<sup>nd</sup> Edn. Cambridge University Press, Cambridge.



<b>Course Code: ENGL 126</b> <b>Course Title: Basic English (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 1</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to make students develop their communicating skills in English language in both academic and practical life.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Prepare the students fluent in speaking in English language</li> <li>• Emphasize on accurate pronunciations</li> <li>• Enrich the listening skills</li> <li>• Practice other communicative and creative skills</li> <li>• Build up the quality of leadership</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
-			
<ul style="list-style-type: none"> <li>• Learn the techniques of listening</li> <li>• Listen to the speakers perfectly</li> </ul>	<b>Listening -</b> Listening to utterances and connected speech	Lecture Discussion Classroom instruction (participatory) Dialogue Group works Pair works using audio cassettes/CDs of pronunciation regarding course book Lab exercise	Quiz Short answer Oral test Performance Class attendance
<ul style="list-style-type: none"> <li>• Develop pronunciation skills</li> <li>• Speak fluently</li> <li>• Learn to make questions</li> <li>• Increase the extrovert qualities</li> </ul>	<b>Speaking - IPA</b> symbols; dialogues; story telling; Speaking on a sudden topic; W/H questions	Lecture Discussion Classroom instruction (participator) Multimedia Group works Pair works Role play Debate Lab exercise	Quiz Short answer Oral presentation Performance Class attendance
<ul style="list-style-type: none"> <li>• Apply both academic and nonacademic reading strategies in time constraint</li> <li>• Increase vocabulary</li> </ul>	<b>Reading –</b> Reading comprehension; reading for specific information, general	Lecture Discussion Classroom instruction (critical thinking and	Quiz Short answer Oral presentation Book review

	information; knowing vocabulary items	decision making) Self-study Group works Pair works Lab exercise	Performance Class attendance
<ul style="list-style-type: none"> <li>Practice different types of creative writing methods</li> <li>Develop different strategies of writing</li> </ul>	<b>Writing</b> – Movie review; story completion; report writing; describing picture; writing a script	Lecture Discussion Classroom instruction (critical thinking) Multimedia Group works Pair works Lab exercise	Quiz Short answer Essay type Practical note book Report writing Class attendance
<ul style="list-style-type: none"> <li>Improve the leadership quality</li> <li>Present any topic confidently and perfectly</li> <li>Overcome the introvert attitude</li> </ul>	<b>Presentation :</b> Presenting selected topics individually and in a group	Lecture Discussion Classroom instruction (participatory) Multimedia Group works Pair works Individual work Lab exercise	Presentation Questioning Answering Evaluating Performance Class attendance

### Reference Books

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3. M. Maniruzzman. 2002. Basic English Language Skills. Friends Book Corner, Dhaka.
4. J. Seely. 2005. Oxford Guide to Effective Writing and Speaking. 2<sup>nd</sup> Edn. Oxford University Press, Oxford.
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6. R.R. Jordan. 1986. Academic Writing Course. Collins Publication.
7. Q.M. Billah, G.S. Chowdhury and M. Alam. 2005. Foundation English for Undergraduates. 2<sup>nd</sup> Edn. Friends Publication, Dhaka.
8. A.S. Hornby. 2010. Oxford Advanced Learners Dictionary. 7<sup>th</sup> Edn. Oxford University Press, Oxford.
9. D. Hopkins and M. Nettle. 2006. Passport to IELTS. New Revised Edn. Pearson Education Limited.
10. Barry and S. MaCarter. 2007. Improve your IELTS: Listening and Speaking Skills. Macmillan Education, Towns Road, Oxford.
11. J.D. O’Conner. 1980. Better English Pronunciation. 2<sup>nd</sup> Edn. Cambridge University Press, Cambridge.
12. A. Baker. 2006. Ship or Sheep? An Intermediate Pronunciation Course. 3<sup>rd</sup> Edn. Cambridge University Press, Cambridge.

## Department of Plant Pathology

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	PLPA 325: Crop Protection-II (Theory)	2	3	I
2.	PLPA 326: Crop Protection-II (Practical)	1	3	I
	Theory	2		
	Practical	1		
	<b>Total</b>	<b>3</b>		

<b>Course Code: PLPA 325</b> <b>Course Title: Crop Protection-II (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 3</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide fundamental concept on Plant Pathology and Microbes causing diseases of Agricultural crops, crop losses assessment due to plant diseases and strategies/tools for their management.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire knowledge on different microbes causing diseases of agricultural crops</li> <li>• Recognize the etiology of different plant diseases</li> <li>• Gather knowledge on infection processes of different plant pathogens</li> <li>• Gain knowledge on crop loss assessment due plant diseases.</li> <li>• Introduce with technical knowledge for formulation and application of pesticides.</li> </ul>			
<b>Intended learning Outcomes (ILOs)</b>	<b>Course content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
The student will be able to-			
<ul style="list-style-type: none"> <li>• Define Plant Pathology</li> <li>• Describe the concept, scope and prospectsof Plant Pathology</li> </ul>	<b>Plant Pathology:</b> Definition, concept, scope and prospects.	Lecture Multimedia presentation	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Explain the relationship of Plant Pathology to sustainable agriculture.</li> <li>• Describe crop losses due to plant diseases in Bangladesh and the world context.</li> </ul>	Plant pathology related to sustainable agriculture	Lecture Multimedia presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Discuss the contribution of plant pathologists in food security and safety</li> </ul>	Plant pathology and food security/safety.	Lecture Multimedia presentation Interactive discussion	Quiz/MCQ Short answer Essay type answer Report
	<b>Entities that threat our crops:</b>		
<ul style="list-style-type: none"> <li>• Define fungi/ fungi like organism</li> <li>• Identify fungi based on their morphological, cultural and pathogenic structures</li> <li>• Classify fungi</li> <li>• Explain reproductive features</li> <li>• Explain the nutrition uptake behavior of fungi</li> <li>• State the general control measures of fungi</li> </ul>	<b>Fungi:</b> Definition, characters, morphology, identification, reproduction, classification, sexual and asexual fruiting bodies with example, general control measures.	Lecture Multimedia presentation Lab/field visit	Quiz/MCQ Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Identify and explain the key characteristics of plant pathogenic bacteria</li> <li>• Describe the morphology, reproduction and nutrition of bacteria</li> <li>• State the general control measures</li> </ul>	<p><b>Bacteria:</b> Definition, characters, morphology, general control measures.</p>	<p>Lecture Multimedia presentation</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Define and characterize viruses</li> <li>• Identify virus, viroids and mycoplasma based on their physio-chemical properties</li> <li>• Classify plant pathogenic viruses</li> <li>• Describe the transmission mechanisms of viruses</li> <li>• State overall management strategies</li> </ul>	<p><b>Virus:</b> Definition, unifying characters, physio-chemical, structures, identification transmission, disease symptoms in crop plants and management.</p>	<p>Lecture Multimedia /Visual presentation Field visit</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Define and classify plant parasitic nematodes</li> <li>• Identify plant parasitic nematodes</li> <li>• Discuss the feeding behaviour of plant parasitic nematodes</li> <li>• Illustrate the life cycle of nematodes</li> <li>• Describe the symptoms of nematode diseases of crop plants</li> <li>• Explain the general control measures of plant parasitic nematodes</li> </ul>	<p><b>Nematode:</b> Definition, characters, morphology, feeding behavior, life cycle, disease symptom and control.</p>	<p>Lecture Multimedia /Visual presentation Poster presentation</p>	<p>Quiz/MCQ Short answer Essay type answer</p>
<ul style="list-style-type: none"> <li>• Identify blast, brown spot, BLB, sheath blight, sheath rot, white tip and root-knot diseases of rice</li> <li>• Identify leaf spot, black point, blast, rot and knot diseases of wheat</li> <li>• Identify sheath blight and blotch and cob diseases of maize</li> <li>• Prescribe the control measures against cereal diseases</li> </ul>	<p><b>Diseases of cereals:</b> Spot, blotch, blight, rot, knot, black point, sheath blight, white tip, blast and cob diseases.</p>	<p>Lecture Multimedia presentation Field visit</p>	<p>Quiz/MCQ Report/documentation Essay type answer</p>

<ul style="list-style-type: none"> <li>Identify foot and root rot, mosaic, rust, wilts and blights of pulse crops based on typical symptoms and their causal pathogen</li> <li>Prescribe the control measures against the pulse crop diseases</li> </ul>	<b>Diseases of pulses:</b> Foot and root rot, wilt, blight, powdery mildew, yellow mosaic, rust, anthracnose etc.	Lecture Multimedia presentation Field visit	Quiz/MCQ Documentation Essay type answer Report
<ul style="list-style-type: none"> <li>Identify spot, blight, anthracnose, root rot of oilseed crops based on typical symptoms and their causal pathogen</li> <li>Prescribe the control measures against the diseases</li> </ul>	<b>Diseases of oil seed crops:</b> Spot, blight, anthracnose, root knot.	Lecture Multimedia presentation Field visit	Quiz/MCQ Report Essay type answer
<ul style="list-style-type: none"> <li>Identify stem rot, black band, anthracnose, leaf spot, soft rot, root-knot and mosaic diseases of Jute and cotton on the basis of sign and symptoms</li> <li>Prescribe the control measures against jute and cotton diseases</li> </ul>	<b>Diseases of fibre crops:</b> Black band, stem rot, anthracnose, soft rot, root-knot, spot, mosaic/chlorosis, angular leaf spot etc.	Lecture Multimedia presentation Field visit	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Identify anthracnose, stem end rot, powdery mildew of mango, Die back, scab and canker of citrus, anthracnose of banana and die back of guava</li> <li>Prescribe the control measures against the major fruit diseases..</li> </ul>	<b>Diseases of fruits:</b> Anthracnose, stem end rot, powdery mildew of mango, die back, scab, canker of citrus, anthracnose of banana, die back of guava.	Lecture Multimedia presentation Field visit	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Describe the biotic causes of vegetables diseases.</li> <li>Diagnose the diseases of vegetables on the basis of characteristics symptoms</li> <li>Explain the host-pathogens interaction for disease development.</li> <li>Manage vegetable diseases by using different strategies</li> </ul>	<b>Diseases of vegetables:</b> spots, blight, rot, wilt, damping off and root knot etc.	Lecture Multimedia presentation Field visit	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>Identify spot, blight, mosaic and leaf curl diseases based on typical symptoms and their causal pathogen.</li> <li>Prescribe the control measures</li> </ul>	<b>Diseases of narcotic crops:</b> Spot, blight, mosaic, leaf curl etc.	Lecture Multimedia presentation Field visit	Quiz/MCQ Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Prescribe the control measures in terms of cultural, biological, physical and chemical practices</li> </ul>	<b>Diseases management strategies for safe food production:</b> Cultural control, chemical control, biological control, physical control and IPM.	Lecture Multimedia presentation	Quiz/MCQ Essay type answer
<ul style="list-style-type: none"> <li>• Identify post-harvest disease of fruits and vegetables based on typical symptoms and their causal pathogen</li> <li>• Prescribe the control measures</li> </ul>	<b>Post-harvest Pathology:</b> Post harvest diseases of fruits and vegetables and their management.	Lecture Multimedia presentation Field visit	Quiz/MCQ Essay type answer Report
<ul style="list-style-type: none"> <li>• Explain the importance of seed borne diseases in relation to quality crop production, food security</li> <li>• Describe the entry and transmission mechanism of seed borne pathogen, the features of quality seed</li> <li>• Exercise the production technology of quality seed</li> <li>• Describe the seed health testing methods and seed storage management</li> </ul>	<b>Seed pathology:</b> Definition of seed pathology and quarantine means, Seed pathology and related regulations, Production of quality healthy seeds, Seed trade, major seed companies and seed trading,	Lecture Interactive discussion Multimedia presentation	Quiz/MCQ Short answer Essay type answer
<ul style="list-style-type: none"> <li>• Prepare pesticidal solution with proper doses</li> <li>• Apply methods of fungicides and other pesticides</li> <li>• Introduce with fungicides and other pesticides available in Bangladesh market</li> </ul>	<b>Pesticides:</b> Definition, pesticide market and related regulations.	Lecture Demonstration exercise Pesticide company visit Assignment	Quiz Demonstration on performance Report

### Reference Books

1. Alexopoulos, C.J. Mims, C.W. and Blackwell, M.. 2007. Introductory Mycology. John Wiley and Sons: New York.
2. Agrios, G.N. 2005. Plant Pathology. 5<sup>th</sup> Edition. Academic Press, New York.
3. Dube, H.C. 1996. A text book of fungi, bacteria and viruses. Vikas Publication India.
4. Ashrafuzzaman, M.H. 1991. A Text Book of Plant Pathology. Bangladesh Agricultural Research Council.
5. Webster, J. 1991. Introduction to Fungi, Second Edition, Cambridge University Press, Cambridge.
6. Ellis, M.B. 2001. Dematiaceous Hyphomycetes. CAB International Pub.
7. Goto, M. 1996. Fundamental of Bacterial Plant Pathology. Academic Press Inc. Tokyo.
8. Mathews, R.E.F. 1991. Plant Virology. 3<sup>rd</sup> Edition. Academic Press, INC. 1250 Sixth Avenue, San Diego, California, USA.
9. Schumann, G.L. and D'Arcy, C. J. 2010. Essential Plant Pathology. APS press, USA.
10. Trigiano, R.N. 2007. Plant Pathology concept and laboratory exercise, CRC press, India.

<b>Course Code: PLPA 326</b> <b>Course Title: Crop Protection-II (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 3</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed on diagnosis of major horticultural and Agronomic crops diseases as well as their management practices.			
<b>Course learning outcomes:</b> By the end of the practical exercises, the students <ul style="list-style-type: none"> <li>• Acquire practical knowledge about equipment (microscope) and slide preparation for microscopic identifications of pathogen</li> <li>• Predict knowledge about major diseases of Agronomic and horticultural crops</li> <li>• Identify the pathogens from disease specimens of Agronomic and horticultural crops</li> <li>• Introduce with fungicides available in BD market and the amount required for plant protection</li> <li>• Explain seed health for prevent seed borne diseases.</li> </ul>			
<b>Intended learning Outcomes (ILOs)</b> The students will be able to-	<b>Course content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Introduce with equipment used in Plant Pathology laboratory</li> <li>• Explain how to handle microscope in laboratory</li> </ul>	Equipments used in plant pathology laboratory (Microscopy)	Lecture Demonstration Internet modules	Quiz Presentation Short answer
	<b>1. Detailed study on</b>		
<ul style="list-style-type: none"> <li>• Demonstrate slide preparation for future study of plant pathogen</li> </ul>	Preparation of culture media	Lecture Presentation Media preparation	Quiz Presentation Short answer
<ul style="list-style-type: none"> <li>• Discuss hygienic and decontaminated state for pathogens grow in artificial media.</li> </ul>	Study on sterilization	Lecture Practical use	Quiz Presentation Short answer
<ul style="list-style-type: none"> <li>• Apply how to prepare slide from host for microscopic identifications of pathogen</li> </ul>	Techniques involved in slide preparation	Lecture Demonstration Slide preparation	Quiz Presentation Short answer
<ul style="list-style-type: none"> <li>• Recognize disease symptoms</li> <li>• Assign the causal agent on plants, based on observation of diseases appearance and microscopic study.</li> </ul>	Identification of major diseases of crops	Lecture Demonstration and Slide preparation	Quiz, Short answer Presentation performance
<ul style="list-style-type: none"> <li>• Recognize post-harvest disease symptoms</li> <li>• Identify the causal, based on observation of diseases appearance and microscopic study.</li> </ul>	Visit fruit and seed market and collection of diseased sample	Lecture Demonstration Slide preparation	Quiz, Presentation performance Short answer



<ul style="list-style-type: none"> <li>• Predict practical knowledge about disease in field condition</li> <li>• Implement the collection and preservation process of disease specimen</li> </ul>	Diseased sample collection from crop fields	Lecture Demonstration Slide preparation	Quiz Presentation performance Short answer
	<b>2. Brief study on:</b> (Study of symptoms aided by permanent slides of the pathogen)		
<ul style="list-style-type: none"> <li>• Identify the pathogen of the disease of crops</li> <li>• Discover the morphology of pathogen</li> <li>• Assign the causal agent on plants, based on observation of diseases appearance.</li> </ul>	Identification of major pathogen of important agricultural crops	Lecture Demonstration Assignment	Quiz Short answer Report
<ul style="list-style-type: none"> <li>• State the seed health condition for prevent seed borne diseases</li> <li>• Apply the action for controlling the seed borne diseases.</li> </ul>	Seed health study	Lecture Demonstration and Slide preparation.	Quiz Presentation performance Short answer
<ul style="list-style-type: none"> <li>• Illustrate the available fungicide in BD</li> </ul>	Apparatus used for pesticide application.	Lecture Demonstration	Quiz Presentation performance Short answer
<ul style="list-style-type: none"> <li>• Predict the available pesticides listed for plant protection , DAE, BD</li> </ul>	Registered pesticides (disease) listed in the plant protection wings, DAE, Bangladesh.	Lecture Demonstration and field visit	Quiz Presentation performance Short question
<ul style="list-style-type: none"> <li>• Gather knowledge about the seed companies in BD</li> </ul>	Visit to selected seed companies in Bangladesh.	Lectures Demonstration and selected company visit	Quiz Presentation Short answer Report
<ul style="list-style-type: none"> <li>• Calculate the amount of fungicides required for disease control</li> </ul>	Calculation and formulation of pesticides, Registered pesticides (disease) listed in the plant protection wings, DAE, Bangladesh	Lectures Demonstration	Quiz Presentation performance Short answer

	<b>Comprehensive report on</b>		
<ul style="list-style-type: none"> <li>Identify the seed borne diseases and grade the seed and fruit on the basis of infection</li> </ul>	Grading of seed and fruits on the basis of infection	Lecture Demonstration	Quiz Presentation performance Short answer

**Reference Books**

- Schumann, G. L and Cleora J. D'Arcy. 2010. Essential Plant Pathology. 2<sup>nd</sup> Edition.
- Agrios, G.N. 2005. Plant Pathology, Fifth edition. Academic press, New York.
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- Rangashwami, G and Mahadevan, A. 2004. Diseases of Crop plants in India. Prentice-Hall of India, New Delhi-110001.
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- Wheeler, B. E. J. 1969. An introduction to Plant Diseases, John Wiley and Sons Ltd.

## Department of Soil Science

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	SOIL 425: Fertilizer Management (Theory)	2	4	I
	Theory	2		
	<b>Total</b>	<b>2</b>		

<b>Course Code: SOIL 425</b> <b>Course Title: Fertilizer Management (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 4</b>	<b>Semester: I</b>
<b>Rationale:</b> The course is intended to provide applied knowledge on fertilizers and manures and their management system in relation to sustainable agriculture			
<b>Course Learning Outcomes:</b> <ul style="list-style-type: none"> <li>• Describe soil, major components of soil, soil formation and soil profile development.</li> <li>• Explain the concept of essential plant nutrient elements, their functions and their deficiency symptoms in major crops.</li> <li>• Apply fertilizers and manures for major crops i.e. time, methods, rationale of fertilizer use.</li> <li>• Discuss and use balance fertilization, deep placement of fertilizer, IPNS in crop production</li> <li>• Explain the relation between fertilizer application and soil environment pollution.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b>  The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Describe definition of soil &amp; the major components of soil.</li> <li>• Explain soil forming factors, soil forming processes and soil profile</li> <li>• Discuss the physical, chemical and biological properties of soil.</li> </ul>	<b>Introduction to Soils-</b> Concept of soil. Major components of soil. Soil formation and soil profile. Physical, chemical and biological properties of soils.	Lecture Discussion Presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Discuss the criteria of essential plant nutrient.</li> <li>• List down &amp; classify the essential plant nutrients.</li> <li>• Describe the available forms of essential plant nutrients &amp; their functions to plants.</li> <li>• Explain and identify the deficiency symptoms of nutrients in plants.</li> <li>• Explain the soil conditions that induce nutrient deficiency in crops.</li> </ul>	<b>Plant nutrients-</b> Essential plant nutrients; Available forms of plant nutrients; Functions and deficiency symptoms of nutrients in plants; Soil conditions for nutrient deficiency in crops.	Lecture Discussion Presentation Field visit	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• List down &amp; classify fertilizers &amp; manures.</li> <li>• Differentiate between fertilizer and manure</li> <li>• Describe the composition of</li> </ul>	<b>Fertilizer and Manure-</b>  Types and composition of fertilizers.  Types and composition	Lecture Discussion Visual presentation Problem	Quiz/MCQ Short answer Essay type answer Calculation

fertilizers & manure. <ul style="list-style-type: none"> <li>• Calculate the required doses of fertilizers and manures for major crops.</li> </ul>	of manure.	solving	
<ul style="list-style-type: none"> <li>• Illustrate the time and methods of fertilizer application in different crops.</li> <li>• Describe the rationale of fertilizer use in different cropping pattern</li> <li>• Describe the necessity and use of balanced fertilization and deep placement of urea in crop production.</li> <li>• Calculate and apply fertilizer in different crops by using fertilizer recommendation guide</li> <li>• Explain IPNS and calculate required doses of fertilizers and manures for crop production with IPNS system.</li> <li>• Explain the demands of total fertilizers and manures in Bangladesh</li> <li>• Discuss the process of soil and environment pollution through fertilizer application and other pollutants</li> </ul>	<b>Fertilizer management-</b> Time and methods of fertilizer application; Rationale of fertilizer use; Fertilizer rates for crops and cropping patterns; Balanced use of fertilizers; Deep placement of urea; Fertilizer use in Bangladesh; Use of fertilizer recommendation guide for fertilizer application. Integrated plant nutrition system (IPNS). Fertilizers and soil environment pollutions.	Lecture Discussion Visual presentation Problem solving	Quiz/MCQ Short answer Essay type answer Calculation

**Reference Books**

1. N. C. Brady and R. R. Weily. 2014. The Nature and Properties of Soils. 14 the Edn. Macmillan Pub. Co., New York.
2. T.D. Biswas and S.K. Mukherjee. 1989. Text Book of Soil Science. Tata McGraw-Hill Pub. Co., New Delhi, India.
3. J.L.Havlin, Tisdale, S.L., Nelson, W.L. and Beaton, J.D. 1999. Soil Fertility and Fertilizers. 6 th Edn. Macmillan Publishing Co. New York.
4. D.K.Das.2014. Introductory Soil Science. Kalyani Publishers, India
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6. M. M. Rai.1995. Principles of Soil Science. MacMillan India Ltd., New Delhi.
7. ISSS. 2000. Fundamentals of Soil Science. Published by Indian Society of Soil Science.
8. Fertilizer recommendation guide, BARC, Farmgate, Dhaka

## Department of Fisheries Biology and Genetics

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	FISH 125: Elements of Fisheries (Theory)	2	1	I
2.	FISH 126: Elements of Fisheries (Practical)	1	1	I
	Theory	2		
	Practical	1		
	<b>Total</b>	<b>3</b>		

<b>Course Code: FISH 125</b> <b>Course Title: Elements of Fisheries (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 1</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide fundamental knowledge on fisheries sector especially related to fisheries business and economics			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Introduce fisheries resources of Bangladesh</li> <li>• Understand fundamental knowledge of fish farming</li> <li>• Enrich knowledge on hatchery management and fish seed production</li> <li>• Acquire knowledge on fish processing and fishery products</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Describe various components of fisheries resources</li> <li>• Discuss current status and importance of fisheries sector in Bangladesh</li> </ul>	<b>Introduction:</b> Fishes and fisheries resources of Bangladesh, classification of fish, important terminologies, quality of fish as food, importance of fisheries sector in Bangladesh's economy.	Lecture Discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Explain different types of aquaculture</li> <li>• State the key characteristics of extensive, semi-intensive and intensive aquaculture</li> </ul>	<b>Diversity in Aquaculture:</b> Diversity in aquaculture: culture system (pond, cage, pen, raceway, RAS etc.), monoculture and polyculture, extensive, semi-intensive and intensive aquaculture.	Lecture Discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report
<ul style="list-style-type: none"> <li>• Classify aquaculture ponds</li> <li>• Describe various steps of pond construction and preparation for aquaculture</li> <li>• Explain how to stock fish fry and rear them until harvest</li> </ul>	<b>Basics of Pond Aquaculture:</b> Definition, ecology and classification of pond, characteristics of an ideal pond, pond construction and preparation, fertilization and liming, source of fish seeds, transportation and stocking of fish fry, post stocking management, water quality monitoring.	Lecture Discussion Visual presentation Assignment	Quiz/MCQ Short answer Essay type answer Report

<ul style="list-style-type: none"> <li>• Illustrate the components of a fish hatchery with functions</li> <li>• Describe management and operation of fish hatchery</li> </ul>	<p><b>Fish Hatchery Management:</b> Basic consideration of fish hatchery establishment, types and components of fish hatchery, management of carp and catfish hatchery, operation procedure of tilapia hatchery.</p>	<p>Lecture Discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Classify and describe fish diseases with their prevention and control measure</li> </ul>	<p><b>Fish Health Management:</b> Etiology, symptoms, prevention and control of some common parasitic, pathogenic, environmental and nutritional fish diseases.</p>	<p>Lecture Discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Discuss different terminologies related to fish nutrition and fish feed technology</li> <li>• Identify different feed ingredients and assess the quality of a compound fish feed</li> </ul>	<p><b>Nutrition and Feeding of Fish:</b> Terminologies, nutrition requirements of fish, classification of fish food, fish feed ingredients, types of fish feed, methods of feed preparation and application, methods of assessing nutritional quality of fish feed.</p>	<p>Lecture Discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Describe importance and activities of hilsa fishery in Bangladesh</li> </ul>	<p><b>Hilsa Fishery:</b> Importance of Hilsa fishery, distribution of hilsa, production, fishing season, breeding and migration, commercial importance, hilsa sanctuaries, laws and regulations, problems and recommendation of hilsa fishery.</p>	<p>Lecture Discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Classify fishing gears, crafts and vessels with examples</li> <li>• Describe different aspects of sea fishing</li> </ul>	<p><b>Sea Fishing and Fish Preservation:</b> Fishing gears, crafts and trawlers, mother vessel and fishing fleet, fishing ground, commercially important marine species and catch composition, fishing methods, navigation, fish location and detection, principles and methods of fish preservation.</p>	<p>Lecture Discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>



<ul style="list-style-type: none"> <li>• Describe different fish processing methods</li> <li>• Discuss products and by-products of fish with their uses</li> </ul>	<p><b>Fish Processing and Fishery Products:</b> Fish processing methods: chilling, freezing, drying, salting, smoking, canning, fermentation; operation of fish processing plant, fishery products and by-products, value added products, sea weed and sea weed based products, methods of assessing quality of fish and fishery products.</p>	<p>Lecture Discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Describe marketing system and channels of fish and fishery products</li> </ul>	<p><b>Fish Marketing System in Bangladesh:</b> Fish market, primary and secondary market, marketing channels in Bangladesh and international market, problems in marketing system, mitigation measures.</p>	<p>Lecture Discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>
<ul style="list-style-type: none"> <li>• Explain problems and development activities in fisheries sector of Bangladesh</li> </ul>	<p><b>Problems &amp; Development Activities in Fisheries Sector:</b> Overall problems in fisheries sector, prevention and mitigation measures, government initiatives, resources utilization and conservation, NGOs activities in the field of fisheries, area covered and funding opportunities</p>	<p>Lecture Discussion Visual presentation Assignment</p>	<p>Quiz/MCQ Short answer Essay type answer Report</p>

**Reference Books**

1. Jhingran, V. G. 1991. Fish and Fisheries in India. 3<sup>rd</sup> Edition. Hindustan Publishing Delhi. 727 pp.
2. Pillay, T. V. R. 1990. Aquaculture Principles and Practices. Fishing News Books. University Press, Cambridge, Great Britain. 575 pp.
3. Jhingran, V. G and R. S. V. Pullin. 1985. A Hatchery Manual for Common, Chinese and Indian Major Carps. Asian Development Bank and International Centre for Living Aquatic Resources Management, Manila, Philippines. 191 pp.
4. Hall, G. M. 1997 (ed.). Fish Processing Technology. 2<sup>nd</sup> Edition. Blackie Academic & Professional, London, Weinheim, New York, Melbourne, Madras. 309 pp.
5. Clucas, I. J. and A. R. Ward. 1996. Post-harvest Fisheries Development: A Guide to Handling, Preservation, Processing and Quality. Natural Resource Institute, UK. 443 pp.

<b>Course Code: FISH 126</b> <b>Course Title: Elements of Fisheries (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 1</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide primary practical knowledge on fish fry production, aquaculture, fish processing and marketing system.			
<b>Course Learning Outcomes:</b>			
<ul style="list-style-type: none"> <li>• Enrich knowledge and skill on general morphology of fish and identifying commercially important fish species of Bangladesh</li> <li>• Gather practical knowledge on fish feed formulation, fertilization and fish health management in aquaculture system</li> <li>• Acquire knowledge on design and operation of fish farm, hatchery and fish processing plant.</li> </ul>			
<b>Intended Learning Outcomes (ILOs)</b> The student will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Explain different external body parts of fish</li> </ul>	External morphology of a bony fish.	Lecture Discussion Demonstration	Quiz/MCQ Short answer Demonstration performance, Viva-voice Practical note book
<ul style="list-style-type: none"> <li>• Differentiate freshwater prawn and marine shrimp with external anatomy</li> </ul>	External morphology of prawn and shrimp.	Lecture Discussion Demonstration	Quiz/MCQ Short answer Demonstration performance, Viva-voice Practical note book
<ul style="list-style-type: none"> <li>• Identify common freshwater fish species</li> </ul>	Identification of commercially important fresh water fishes of Bangladesh.	Lecture Discussion Demonstration	Quiz/MCQ Short answer Demonstration performance, Viva-voice Practical note book
<ul style="list-style-type: none"> <li>• Identify commercial marine fish species</li> </ul>	Identification of commercially important marine fishes of Bangladesh.	Lecture Discussion Demonstration	Quiz/MCQ Short answer Demonstration performance, Viva-voice Practical note book

<ul style="list-style-type: none"> <li>• Design and construct a fish farm with calculation of necessary expenses</li> </ul>	Design and construction of a fish farm.	Lecture Discussion Classroom exercise Demonstration	Quiz/MCQ Short answer Demonstration performance, Viva-voice Practical note book
<ul style="list-style-type: none"> <li>• Identify and operate farm equipments and machines</li> </ul>	Acquaintance with modern equipments of fish farming and their application	Lecture Discussion Demonstration	Quiz/MCQ Short answer Demonstration performance, Viva-voice Practical note book
<ul style="list-style-type: none"> <li>• Acquaint different fertilizer used in aquaculture</li> </ul>	Acquaintance with various fertilizer and their application in aquaculture.	Lecture Discussion Demonstration	Quiz/MCQ Short answer Demonstration performance, Viva-voice Practical note book
<ul style="list-style-type: none"> <li>• Recognize different fish feed ingredient used in fish culture</li> </ul>	Identification of feed ingredients.	Lecture Discussion Demonstration	Quiz/MCQ Short answer Demonstration performance, Viva-voice Practical note book
<ul style="list-style-type: none"> <li>• Formulate and prepare rations for cultured fish</li> </ul>	Formulation and preparation of artificial feed for aquaculture.	Lecture Discussion Demonstration	Quiz/MCQ Short answer Demonstration performance, Viva-voice Practical note book
<ul style="list-style-type: none"> <li>• Acquaint different chemicals and drugs used in commercial aquaculture</li> </ul>	Introduction to different commercial chemicals and drugs used in fish production.	Lecture Discussion Demonstration Field visit	Quiz/MCQ Short answer Demonstration performance, Viva-voice Practical note book Report
<ul style="list-style-type: none"> <li>• Establish and operate a fish hatchery</li> </ul>	Design and drawing the layout of a carp hatchery.	Lecture Discussion Demonstration Field visit	Quiz/MCQ Short answer Demonstration performance,

			Viva-voice Practical note book Report
<ul style="list-style-type: none"> <li>Assess degree of freshness of fish and shrimp</li> </ul>	Freshness test of fish and shrimp.	Lecture Discussion Demonstration	Quiz/MCQ Short answer Demonstration performance, Viva-voice Practical note book
<ul style="list-style-type: none"> <li>Acquire knowledge on establishment and operation of a fish processing plant</li> </ul>	Design and drawing the layout of a fish processing plant.	Lecture Discussion Demonstration Field visit	Quiz/MCQ Short answer Demonstration performance, Viva-voice Practical note book Report
<ul style="list-style-type: none"> <li>Calculate cost benefit analysis of a fish farm</li> </ul>	Cost-benefit analysis of establishing and operating a fish farm.	Lecture Discussion Demonstration Classroom exercise	Quiz/MCQ Short answer Demonstration performance, Viva-voice Practical note book

### Reference Books

- Jhingran, V. G. 1991. Fish and Fisheries in India. 3<sup>rd</sup> Edition. Hindustan Publishing Delhi. 727 pp.
- Pillay, T. V. R. 1990. Aquaculture Principles and Practices. Fishing News Books. University Press, Cambridge, Great Britain. 575 pp.
- Jhingran, V. G and R. S. V. Pullin. 1985. A Hatchery Manual for Common, Chinese and Indian Major Carps. Asian Development Bank and International Centre for Living Aquatic Resources Management, Manila, Philippines. 191 pp.
- Hall, G. M. 1997 (ed.). Fish Processing Technology. 2<sup>nd</sup> Edition. Blackie Academic & Professional, London, Weinheim, New York, Melbourne, Madras. 309 pp.
- Clucas, I. J. and A. R. Ward. 1996. Post-harvest Fisheries Development: A Guide to Handling, Preservation, Processing and Quality. Natural Resource Institute, UK. 443 pp.

## Department of Animal Production and Management

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	APMA 125: General Animal Science (Theory)	2	1	I
2.	APMA 126: General Animal Science (Practical)	1	1	I
	Theory	2		
	Practical	1		
	<b>Total</b>	<b>3</b>		

<b>Course Code: APMA 125</b> <b>Course Title: General Animal Science (Theory)</b>	<b>Credit Hour: 2</b>	<b>Level: 1</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide fundamental concept of livestock production and their practices involved in animal sciences with various animal products and by-products technology.			
<b>Course learning outcomes:</b> The major learning outcomes of this course are to- <ul style="list-style-type: none"> <li>• Acquire knowledge about fundamental issues of farm animals.</li> <li>• Enrich knowledge and skill on livestock management</li> <li>• Gather knowledge for uses of animal products and their by-products</li> <li>• Acquaint with various animal products and by-products technology</li> </ul>			
<b>Intended learning outcomes (ILOs)</b> The students will be able to-	<b>Course content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define animal science, animal husbandry and livestock</li> <li>• Explicate the scope of animal science, animal husbandry and livestock</li> <li>• Express the importance of livestock production</li> </ul>	<b>Introduction:</b> Definition and scope of animal science, animal husbandry and livestock; importance of livestock production.	Lecture Visual presentation Interactive discussion Feed back	Quiz Short answer Essay type answer Class attendance
<ul style="list-style-type: none"> <li>• Elucidate animal's terms according to age and sex</li> </ul>	<b>Terminology:</b> Glossary of animals according to age and sex; terminology of cattle, buffalo, horse, sheep, goat etc	Lecture Visual presentation Brain storming Feed back	Quiz Short answer Essay type answer Class attendance
<ul style="list-style-type: none"> <li>• Describe animal genetic resource and indigenous livestock of Bangladesh</li> <li>• Classify different breeds of livestock with examples according to purpose and location</li> <li>• Differentiate between different breeds and types of livestock</li> <li>• Explain animal breeding and artificial insemination</li> </ul>	<b>Animal genetic resources:</b> Animal genetic resources in Bangladesh; breed: classification of cattle, buffalo, goat & sheep breeds; differentiation between <i>Bos Taurus</i> & <i>Bos indicus</i> , description of indigenous cattle, goat and sheep; concept of animal breeding and artificial insemination	Lecture Visual presentation Brain storming Feed back	Quiz Short answer Essay type answer Class attendance

<ul style="list-style-type: none"> <li>• Explain farms and livestock industry in Bangladesh</li> <li>• Express prospects and constraints of livestock business</li> <li>• Discuss integrated livestock farming system</li> </ul>	<b>Business of Livestock Farming:</b> Farms and livestock industry in Bangladesh; prospects and constraints of livestock business; concept of integrated livestock farming system	Lecture Visual presentation Brain storming Feed back	Quiz Short answer Essay type answer Class attendance
<ul style="list-style-type: none"> <li>• Describe livestock feeds and their classification</li> <li>• Discuss essential feed nutrients and their functions</li> <li>• Describe feeding system of livestock</li> </ul>	<b>Animal Feeds &amp; Feeding:</b> Elementary knowledge of feeds; classification of feed stuffs & principles of livestock feeding; essential feed nutrients and their functions; feeding system of livestock	Lecture Visual presentation Brain storming Feed back	Quiz Short answer Essay type answer Class attendance
<ul style="list-style-type: none"> <li>• Define housing for livestock</li> <li>• Describe advantages and disadvantages of livestock house</li> <li>• Select farming sites for livestock houses</li> </ul>	<b>Housing of Livestock:</b> Housing: definition, site selection, advantages & disadvantages; housing system for livestock	Lecture Visual presentation Brain storming Feed back	Quiz Short answer Essay type answer Class attendance
<ul style="list-style-type: none"> <li>• Select and judge the dairy and draught animals</li> </ul>	<b>Selection and Judging of Livestock:</b> Definition, judging of dairy and beef animals	Lecture Visual presentation Brain storming Feed back	Quiz Short answer Essay type answer Class attendance
<ul style="list-style-type: none"> <li>• Define farm and farm management</li> <li>• Get acquaintance with different farm management practices</li> <li>• Plan for beef fattening program and discuss the beef management practices</li> </ul>	<b>Farm Management:</b> Definition and objectives of management; operational work and record keeping of different livestock farm; management practices of cattle, buffalo, goat and sheep; management of beef fattening	Lecture Visual presentation Brain storming Feed back	Quiz Short answer Essay type answer Class attendance
<ul style="list-style-type: none"> <li>• Define and differentiate health and disease status of livestock</li> <li>• Separate healthy and diseased animal</li> <li>• Categorize different</li> </ul>	<b>Animal Health Management:</b> Definition of animal health & disease; recommended normal health status; category of diseases;	Lecture Visual Interactive discussion Feed back	Quiz Short answer Essay type answer Class attendance

<p>diseases</p> <ul style="list-style-type: none"> <li>• Prevent and control of livestock diseases in the farms</li> <li>• Describe vaccination program of cattle and goat</li> <li>• Set up a biosecurity concept in a livestock farm</li> </ul>	<p>signs of good and ill-health; prevention and control of diseases; biosecurity concept of livestock farm</p>		
<ul style="list-style-type: none"> <li>• Design plan and set up a livestock farm</li> </ul>	<p><b>Planning of Livestock Farm:</b> Planning and setting up a livestock farm</p>	<p>Lecture Visual presentation Brain storming Feed back</p>	<p>Quiz Short question Broad question Class attendance</p>
<ul style="list-style-type: none"> <li>• Discuss introduction and basic management of companion &amp; laboratory animals</li> <li>• Explain wild life conservation and biodiversity</li> <li>• Describe basic introduction and management of zoo animals</li> </ul>	<p><b>New Dimension of Livestock:</b> Introduction &amp; basic management of companion &amp; laboratory animals; concept of wild life conservation and biodiversity; introduction &amp; basic management of zoo animals</p>	<p>Lecture Visual Interactive discussion Feed back</p>	<p>Quiz Short question Broad question Class attendance</p>
<ul style="list-style-type: none"> <li>• Acquaint with different products and by-products of livestock</li> <li>• Explain using of animal products and by-products</li> <li>• Describe composition, processing, grading of various livestock products &amp; by-products</li> <li>• Draw a guideline for manufacturing of various value added livestock products</li> <li>• Discuss the marketing and marketing channel of meat, wool, hides &amp; skins, milk and their products</li> </ul>	<p><b>Livestock Products &amp; by-Products:</b> Introduction to different livestock products &amp; by-products; uses of livestock by-products; composition, processing, grading, preservation of meat milk, wool, hides &amp; skins etc. popular value added meat and milk products; manufacturing process of various value added livestock products; making wool into yarn and fabric; Marketing channel of various livestock products &amp; by-products</p>	<p>Lecture Visual Interactive discussion Feed back</p>	<p>Quiz Short question Broad question Class attendance</p>



### **Reference Books**

1. A. Macfadyen. 1966. Animal Ecology: Aims and Methods. Sir Isaac Pitman & Sons Ltd. London.
2. A.F. Fraser and D.M. Broom. 1990. Farm Animal behaviour and welfare, 3rd edition, Thomson Litho Ltd. Scotland, U.K.
3. F.L.H. James, Michael Ralphs and N.B. Darwin. 1988. The Ecology and Economic Impact of poisonous plants on livestock production. West view press/Boulder and London. 6. Mark Ridely. 1990. Animal Behaviour. A concise introduction. Blackwell Scientific publications. Oxford, U.K.
4. G. C. Benerjee. 1999. A Text Book of Animal Husbandry. 8th edition, Oxford and iBH publishing Co. New Delhi, 11001 India.
5. L. Peel and D.E. Tribe. 1983: Domestication, conservation and use of animal resources. World Animal Science A-1, Basic Information, Elsevier, 100 A.E Amsterdam, Netherlands.
6. M.E. Ensminger. 1969. Animal Science, Sixth edition, The interstate Printers and publishers Inc. Danville, Illinois, U.S.A.

<b>Course Code: APMA 126</b> <b>Course Title: General Animal Science (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 1</b>	<b>Semester: I</b>
<b>Rationale:</b> This course is designed to provide applied knowledge on elementary animal production and to apply the practical knowledge in different farm animals & their products and by-products.			
<b>Course learning outcomes:</b>			
<ul style="list-style-type: none"> <li>• Enrich practical knowledge on livestock management</li> <li>• Explain applied livestock farming techniques</li> <li>• Acquire practical knowledge on different farm practices</li> <li>• Achieve practical knowledge on the uses of animal products and by-products</li> </ul>			
<b>Intended learning outcomes (ILOs)</b> The students will be able to-	<b>Course content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Approach and handle of farm animals</li> </ul>	Approaching and handling of animals	Lecture Visual presentation Demonstration Hand on practice Group discussion Practical note book preparation	Quiz Short answer Demonstration performance Identification Practical note book Viva voce Class attendance
<ul style="list-style-type: none"> <li>• Describe the objectives of restraining and casting</li> <li>• Control the animals partially with different restraining with tools</li> <li>• Control animals completely</li> </ul>	Restraining and casting of animals	Lecture Visual presentation Demonstration Hand on practice Group discussion Practical note book preparation	Quiz Short answer Demonstration performance Identification Practical note book Viva voce Class attendance
<ul style="list-style-type: none"> <li>• Identify different external body points of cattle, goat, sheep and horse</li> <li>• Differentiate different farm animals according to external body points of view</li> </ul>	External body points of cattle, horse, goat and sheep	Lecture Visual presentation Demonstration Hand on practice Group discussion Practical note book preparation	Quiz Short answer Demonstration performance Identification Practical note book Viva voce Class attendance
<ul style="list-style-type: none"> <li>• Identify different livestock breeds</li> </ul>	Identification of different livestock breeds	Lecture Visual presentation Demonstration Hand on practice Group discussion Practical note book	Quiz Short answer Demonstration performance Identification Practical note book

		preparation	Viva voce Class attendance
<ul style="list-style-type: none"> <li>Describe the importance of live weight determination of livestock</li> <li>Determine the live weight of animal by measuring tapes</li> </ul>	Live weight determination of livestock	Lecture Visual presentation Demonstration Hand on practice Group discussion Practical note book preparation	Quiz Short answer Demonstration performance Identification Practical note book Viva voce Class attendance
<ul style="list-style-type: none"> <li>Describe the importance of ageing of livestock</li> <li>Determine the age of cattle, buffalo, goat, sheep, horse, etc. by dentition</li> </ul>	Dentition and aging of animals	Lecture Visual presentation Demonstration Hand on practice Group discussion Practical note book preparation	Quiz Short answer Demonstration performance Identification Practical note book Viva voce Class attendance
<ul style="list-style-type: none"> <li>Describe the objective of different management practices</li> <li>Perform management practices in livestock farms</li> </ul>	Common management practices in livestock farm: castration, marking, grooming & washing, bedding & clothing, dehorning & disbudding etc.	Lecture Visual presentation Demonstration Hand on practice Group discussion Practical note book preparation	Quiz Short answer Demonstration performance Identification Practical note book Viva voce Class attendance
<ul style="list-style-type: none"> <li>Identify livestock feeds</li> <li>Enlist different livestock feeds available in Bangladesh</li> </ul>	Identification of livestock feedstuffs	Lecture Visual presentation Demonstration Hand on practice Group discussion Practical note book preparation	Quiz Short answer Demonstration performance Identification Practical note book Viva voce Class attendance
<ul style="list-style-type: none"> <li>Discuss the importance of balance ration formulation</li> <li>Formulate balanced economic ration for cattle</li> </ul>	Formulation of balanced economic ration for cattle	Lecture Visual presentation Demonstration Hand on practice Group discussion Practical note book preparation	Quiz Short answer Demonstration performance Identification Practical note book Viva voce Class attendance
<ul style="list-style-type: none"> <li>Demonstrate manufacturing process of livestock feed in a</li> </ul>	Manufacturing process & physical properties of	Lecture Visual presentation Demonstration	Quiz Short answer Demonstration

<p>commercial feed industry</p> <ul style="list-style-type: none"> <li>• Demonstrate physical properties of ready feed for livestock</li> </ul>	<p>livestock feed in a commercial industry</p>	<p>performance Hand on practice Group discussion Practical note book preparation</p>	<p>performance Identification Practical note book Viva voce Class attendance</p>
<ul style="list-style-type: none"> <li>• Detect adulteration of milk</li> </ul>	<p>Adulteration test of milk</p>	<p>Lecture Visual presentation Demonstration Hand on practice Group discussion Practical note book preparation</p>	<p>Quiz Short answer Demonstration performance Identification Practical note book Viva voce Class attendance</p>
<ul style="list-style-type: none"> <li>• Introduce different value added meat products</li> </ul>	<p>Identification of different value added meat products</p>	<p>Lecture Visual presentation Demonstration Hand on practice Group discussion Practical note book preparation</p>	<p>Quiz Short answer Demonstration performance Identification Practical note book Viva voce Class attendance</p>
<ul style="list-style-type: none"> <li>• Introduce different milk and milk products</li> </ul>	<p>Identification of different dairy products</p>	<p>Lecture Visual presentation Demonstration Hand on practice Group discussion Practical note book preparation</p>	<p>Quiz Short answer Demonstration performance Identification Practical note book Viva voce Class attendance</p>
<ul style="list-style-type: none"> <li>• Discuss the importance of making biogas and composting</li> <li>• Prepare biogas plant &amp; composting</li> </ul>	<p>Preparation of biogas plant &amp; composting</p>	<p>Lecture Visual presentation Demonstration performance Hand on practice Group discussion Practical note book preparation</p>	<p>Quiz Short answer Demonstration performance Identification Practical note book Viva voce Class attendance</p>
<ul style="list-style-type: none"> <li>• Justify modern practices maintained in livestock processing plants</li> </ul>	<p>Visit to different livestock processing plants</p>	<p>Lecture Visual presentation Demonstration performance Hand on practice Group discussion Practical note book preparation</p>	<p>Quiz Short answer Demonstration performance Identification Practical note book Viva voce Class attendance</p>

**Reference Books**

1. M.F. Fowler. 1989. Restraining and Handling of Wild and Domestic Animals. 3rd edition, Wiley-Blackwell Publishing, USA.
2. M.M. Hossain and S. Akhter. 1999. Practical Animal Science. 1st edition. Department of Animal Science Bangladesh Agricultural University, Mymensingh2202, Bangladesh.
3. W.C. Miller and E.D.S. Robertson. 1959. Practical Animal Husbandry. 7th Edition, Oliver and Boyd. Edingburg. Tweeddale court.

## Department of Poultry Science

### Course Layout

#### Bachelor of Science in Agricultural Economics (Hons.)

Sl. No.	Course Code and Title	Credit Hours	Level	Semester
1.	POSC 175: Poultry Science (Theory)	2	1	II
2.	POSC 176: Poultry Science (Practical)	1	1	II
	Theory	2		
	Practical	1		
	<b>Total</b>	<b>3</b>		

<b>Course Code : POSC 175</b> <b>Course Title: Poultry Science</b> <b>(Theory)</b>	<b>Credit Hour: 2</b>	<b>Level:1</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is designed to provide fundamental knowledge of poultry science.			
<b>Course learning outcomes:</b>			
<ul style="list-style-type: none"> <li>• Acquire fundamental knowledge on poultry, poultry breeds and poultry products</li> <li>• Enrich knowledge on management and production of poultry</li> <li>• Achieve knowledge on farm planning, marketing, processing and preservation of poultry products</li> <li>• Gather basic information about bio-security of a poultry farm</li> </ul>			
<b>Intended learning outcomes (ILOs)</b> The students will be able to-	<b>Course content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Define poultry and poultry science</li> <li>• Describe economic importance and prospects of poultry industry of Bangladesh</li> <li>• Show the statistics of poultry, poultry industry, poultry products in Bangladesh and around the globe</li> <li>• Discuss food value of egg and chicken meat</li> <li>• List down different type of poultry farms and its related business in Bangladesh</li> </ul>	<b>Introduction-</b> Definition of poultry and poultry science. Economic importance and prospects of poultry industry. Statistics of poultry, poultry industry and poultry products in Bangladesh and around the globe. Food value of egg and chicken meat. Commercial poultry farming and its related business in Bangladesh.	Lecture Interactive discussion Multimedia presentation Brain storming Feed back	Quiz Short answer Essay type answer Class attendance
<ul style="list-style-type: none"> <li>• Recall different terms commonly used in poultry science for different species of poultry</li> </ul>	<b>Terminology-</b> Terminology of different species of poultry	Lecture Discussion Multimedia presentation Feed back	Quiz Short answer Essay type answer Class attendance

<ul style="list-style-type: none"> <li>• Define the Class, Breed, Variety and Strain of poultry</li> <li>• Classify chicken, duck, pigeon and quail</li> <li>• Memorize the name of different specialized poultry species.</li> <li>• Discuss origin, distribution and description of some important world class poultry breeds of chicken, duck, pigeon and quail</li> <li>• Recommend different commercial broiler and layer strains for farming</li> </ul>	<p><b>Poultry Breed-</b> Definition of class, breed, variety and strain of poultry. Classification of chicken, duck, pigeon and quail. Orientation with other specialized poultry species. Description of some important world class poultry breeds. Commercial broiler and layer hybrid chicken.</p>	<p>Lecture Interactive discussion Multimedia presentation Brain storming Feed back</p>	<p>Quiz Short answer Essay type answer Class attendance</p>
<ul style="list-style-type: none"> <li>• Outline the types of poultry house and select site for poultry farm</li> <li>• Discuss housing principles and poultry rearing systems</li> <li>• Classify poultry feed nutrients, feeds and feeding systems</li> <li>• Discuss about incubation and brooding principles of poultry</li> <li>• Define and classify litter</li> <li>• plan light schedule for broiler and layer farm</li> </ul>	<p><b>Poultry management-</b> Poultry housing, poultry rearing, poultry feeds and feeding, incubation of eggs, brooding of chicks</p>	<p>Lecture Interactive discussion Multimedia presentation Brain storming Feed back</p>	<p>Quiz Short answer Essay type answer Class attendance</p>
<ul style="list-style-type: none"> <li>• Describe production technology of broiler and layer flock</li> <li>• Explain the concept of organic meat and eggs</li> <li>• Assess the factors affecting egg production and broiler performance</li> </ul>	<p><b>Poultry production-</b> Production technology of broiler and layer. Concept of organic meat and eggs. Factors affecting egg production and broiler performance.</p>	<p>Lecture Interactive discussion Multimedia presentation Brain storming Feed back</p>	<p>Quiz Short answer Essay type answer Class attendance</p>
<ul style="list-style-type: none"> <li>• Construct planning of a poultry farm</li> <li>• List down different expenditures of a poultry farm</li> <li>• Find out the net income of a poultry farm</li> </ul>	<p><b>Poultry farm planning-expenditure and income</b></p>	<p>Lecture Discussion Multimedia presentation Feed back</p>	<p>Quiz Short answer Essay type answer Class attendance</p>



<ul style="list-style-type: none"> <li>• Sketch out the marketing channel of live bird and eggs</li> <li>• Narrate the processing and further processing activities of poultry products and value addition</li> <li>• Explain preservation methods of meat and eggs</li> </ul>	<b>Marketing, processing and preservation of poultry meat and eggs</b>	Lecture Interactive discussion Multimedia presentation Brain storming Feed back	Quiz Short answer Essay type answer Class attendance
<ul style="list-style-type: none"> <li>• Define bio-security, health and disease</li> <li>• Memorize the name of some important poultry diseases</li> <li>• take steps for prevention and control of diseases</li> </ul>	<b>Bio-security of poultry farm-</b> Poultry diseases, prevention and control of poultry disease.	Lecture Discussion Multimedia presentation Feed back	Quiz Short answer Essay type answer Class attendance
<ul style="list-style-type: none"> <li>• Achieve the latest research findings and information in the area of poultry science</li> </ul>	<b>Latest research findings-</b> Information about latest research innovations in field of poultry science.	Assignment	Report

### Reference Books

1. D. Sapkota, D. Narahari, J. D. Mahanta. 2018. Avian Production. New India Publishing Agency.
2. M. E. Ensminger 2015. Poultry Science 3/e.CBCPulocation. New Delhi, India.
3. D. Thyagarjan. G.2013.Poultry Production Biotechnology. Sathish serial publications. New Delhi, India.
4. G.C. Banerjee. 2011. A Text Book of Animal Husbandry. Oxford & IBH Publishing CO. LTD. New Delhi, India.
5. G.C. Banerjee. 1992. Poultry. Oxford & IBH Publishing CO. Pvt. Ltd., New Delhi, India.
6. M.C. Neshiem, R.E. Austic and I.E. Card. 1990. Poultry Production, Lea and Febiger, Philadelphia.
7. G.C. Banerjee. 1988. Feeds and Principles of Animal Nutrition, Oxford and IBH Pub. Co. Pvt. Ltd., New Delhi.
8. R A. Singh. 1990. Poultry Production. Kalyani Publishers, New Delhi, India.
9. R L Lakhota. 2006. Agro's Dictionary of Poultry Science. Rajasthan Agricultural University, Agrobio's India.

<b>Course Code : POSC 176</b> <b>Course Title: Poultry Science (Practical)</b>	<b>Credit Hour: 1</b>	<b>Level: 1</b>	<b>Semester: II</b>
<b>Rationale:</b> The course is designed to provide fundamental knowledge in practical poultry science			
<b>Course learning outcomes:</b>			
<ul style="list-style-type: none"> <li>• Achieve basic skill on poultry handling and their external body parts</li> <li>• Identify different poultry breeds, poultry eggs and structures of an egg</li> <li>• Obtain knowledge on incubation and brooding practices</li> <li>• Achieve knowledge on poultry feeds and ration formulation</li> <li>• Enrich different poultry house equipment</li> </ul>			
<b>Intended learning outcomes (ILOs)</b> The students will be able to-	<b>Course Content</b>	<b>Teaching-learning Strategies</b>	<b>Assessment Strategies</b>
<ul style="list-style-type: none"> <li>• Operate handling of poultry birds</li> </ul>	Holding & handling of poultry birds	Lecture Discussion Demonstration Visual presentation Farm/Lab work Feed back	MCQ Short question Sample identification Skill/performance test Practical note book Viva voce
<ul style="list-style-type: none"> <li>• Identify &amp; label external body parts of chicken and duck</li> </ul>	External body parts of poultry	Lecture Discussion Demonstration Multimedia presentation Farm/Lab work Feed back	MCQ Short question Sample identification Skill/performance test Practical note book Viva voce
<ul style="list-style-type: none"> <li>• Identify different species of poultry</li> <li>• Identify and compare different breeds of chicken</li> </ul>	Identification of poultry species and important chicken breeds	Lecture Discussion Demonstration Visual presentation Farm/Lab work Feed back	MCQ Short question Sample identification Skill/performance test Practical note book Viva voce

<ul style="list-style-type: none"> <li>Identify and compare egg and meat type duck breeds</li> </ul>	Identification of egg and meat type duck breeds	Lecture, Discussion Demonstration Multimedia presentation Farm/Lab work Feed back	MCQ Short question Sample identification Skill/performance test Practical note book Viva voce
<ul style="list-style-type: none"> <li>Recommend different broiler and layer strain for farming</li> </ul>	Acquaintance with broiler and layer strains	Lecture Discussion Demonstration	MCQ Short answer Demonstration Performance Viva voce Practical Note Book Class attendance
<ul style="list-style-type: none"> <li>Identify eggs of different poultry species by its color, shell and weight</li> </ul>	Identification of eggs of different poultry species	Lecture Discussion Demonstration	MCQ Short answer Demonstration Performance Viva voce Practical Note Book Class attendance
<ul style="list-style-type: none"> <li>Identify and separate different structures of an egg</li> </ul>	Structures of an egg	Lecture, Discussion  Demonstration Video clip Group work Feed back	MCQ Short question Sample identification Skill/performance test Practical note book Viva voce
<ul style="list-style-type: none"> <li>Select hatching eggs for incubation</li> <li>Explain principle and requirements of incubation</li> <li>Operate incubator to incubate eggs</li> </ul>	Incubation of hatching eggs	Lecture, Discussion Demonstration Video clip Farm/Lab work Feed back	MCQ Short question Sample identification Skill/performance test Practical note book Viva voce

<ul style="list-style-type: none"> <li>• Demonstrate brooding of chicks</li> <li>• Explain principle and requirements of brooding of chicks</li> <li>• Solve problems during brooding of chicks</li> </ul>	Brooding of chicks	Lecture, Discussion Demonstration Multimedia presentation Farm/Lab work Feed back	MCQ Short question Sample identification Skill/performance test Practical note book Viva voce
<ul style="list-style-type: none"> <li>• Classify and identify poultry feeds</li> <li>• Prescribe inclusion level of poultry feed ingredients in poultry ration</li> </ul>	Identification of poultry feeds	Lecture Discussion Demonstration	MCQ Short answer, Demonstration Performance Viva voce Practical Note Book Class attendance
<ul style="list-style-type: none"> <li>• Formulate balance ration for layer, broiler and duck</li> </ul>	Formulation of balanced economic ration for broiler, layer and duck	Lecture Discussion Demonstration	MCQ Short answer Demonstration Performance Viva voce Practical Note Book Class attendance
<ul style="list-style-type: none"> <li>• Discuss different poultry house and hatchery equipment</li> <li>• Identify and explain function of poultry house equipment</li> </ul>	Poultry house equipment	Lecture Discussion Demonstration  Video clip Farm/Lab work Feed back	MCQ Short question  Sample identification  Skill/performance test  Practical note book  Viva voce
<ul style="list-style-type: none"> <li>• Define project</li> <li>• Break down different capital and recurring expenditures</li> <li>• Estimate cost-benefit analysis of a poultry farm</li> <li>• Make plan a poultry project</li> </ul>	Preparation of a poultry project	Lecture Discussion Demonstration	MCQ Short answer Demonstration Performance Viva voce Practical Note Book Class attendance

**Reference Books**

1. D. Thyagarjan. G.2013.Poultry Production Biotechnology. Sathish serial publication. New Delhi, India.
2. G.C. Banerjee. 1988. Feeds and Principles of Animal Nutrition, Oxford and IBH Pub. Co. Pvt. Ltd., New Delhi.
3. G.C. Banerjee. 1992. Poultry. Oxford & IBH Publishing CO. Pvt. Ltd., New Delhi, India
4. G.C. Banerjee. 2011. A Text Book of Animal Husbandry. Oxford & IBH Publishing CO. LTD. New Delhi, India
5. M. E. Ensminger 2015. Poultry Science 3/e.CBCPulocation. New Delhi, India.
6. M.C. Neshiem, R.E. Austic and I.E. Card. 1990. Poultry Production, Lea and Febiger, Philadelphia.
7. R A. Singh. 1990. Poultry Production. Kalyani Publishers, New Delhi, India