

DIPLOMA (AGRICULTURE) – SIXTH SEMESTER

Sixth Semester			
S. No.	Name of Subject	Credits	Total Marks
1	Application of Microbiology in Agriculture	5	100
2	Livestock, Poultry & Organic Farming Management	5	100
3	Agro-processing Project, Credit Planning & Corporate Farming	6	100
4	Practical	6	100
5	Mushroom Cultivation	2	100
Total		24	

Subject Name: APPLICATION OF MICROBIOLOGY IN AGRICULTURE

1. Introduction to microbial world
2. Role of microbes in soil fertility and crop production
3. Carbon, Nitrogen, phosphorus and sulphur cycles
4. Biological nitrogen fixation, Azolla, Blue green algae and mycorrhiza ,Rhizosphere and phyllosphere
5. Microbes in human welfare silage production
6. Biofertilizers, biopesticides, biofuel production
7. Bio degradation of agro waste

Practical's

1. Study and gain knowledge about an agro microbiological laboratory
2. Familiarities with microbiological instruments viz. autoclave, hot air oven, laminar air flow, incubator, deep freeze etc.
3. Introduction and handling of microscope.
4. To learn and gain knowledge about different methods of isolation and purification of microbial culture
5. To know and understand the sterilization methods.
6. Preparation and sterilization of media, pure culture and staining of bacteria
7. Isolation of Rhizobium bacteria from root nodule of legume
8. Method of application of biofertilizers
9. To know and understand the process of isolation of Rhizobium from legume root nodule.
10. To gain significant knowledge about process of isolation of Azotobacter from soil.

References

1. Agricultural micro biology-G.rangaswami and bagyaraj
2. Microbiology-R.P singh

Subject Name: LIVESTOCK, POULTRY & ORGANIC FARMING MANAGEMENT

1. Role of livestock in the national economy, important Indian and exotic breeds of cattle , buffalo, sheep , goat, swine and polutry
2. Reproduction in farm animals and polutry
3. Housing principles, space requirements for different species of livestock and poultry
4. Management of claves, growing heifers and milch animals, management of sheep, goat and swine , incubation, hatching and breeding. Managment of growers and layers, feed ingredients and supplement for livestock and polutry
5. Livestock and poultry diseases ,prevention and control
6. Types of fisheries and their culture system, basic principles of fishery, ornamental fish culture
7. Principles and scope of organic farming in india, organic nutrient resources and its fortification, choice of crop and varieties in organic farming, certification process and standards of organic farming

Practical's

1. Judging of dairy cattle and buffalo.
2. Demonstration of A.I. technique.
3. Demonstration of external body parts.
4. Demonstration of castration, dehorning and farms animal's marking for identification.
5. Use of common appliances in controlling farms animals.
6. Estimation and calculation of cost of production.
7. Estimation of weight and age of livestock.
8. Preparation of practical record.
9. Study and gain knowledge about the various components and their utilization in organic farming.

References

1. Text book of animal husbandry-G.C Banerjee
2. Hand book of animal husbandry-ICAR,New dellhi

Subject Name: AGRO-PROCESSING PROJECT, CREDIT PLANNING & CORPORATE FARMING

1. Business opportunity in agriculture and agro processing
2. Procedures for preparation of projects,legal needs and document required,sources,terms and condition of loans for financing agro service and agro processing projects
3. Importance,classification of credits,sources,purpose for which credit is advanced by the financial institution,source wise and purpose wise rates of interest charged, repayment schedule, credit planning for different forms of business organization
4. Corporate farming: Farm planning, resources estimation, management of crops under corporate farming systems, Harvest and post harvest management and marketing strategies adpoted
5. Classification of small, medium and large scale manufacturing industries;oppertunties of agro industries

6. Trade license and registration mark; Sources of finance, selection of land and factory sheds. Agencies for promotion of different types of industries, source of machine and equipment for starting up a unit.
7. Preparation of project report; Market feasibility reports, techno economical feasible report on fruits and vegetables processing, bakery and confectionary, mushroom manufacture and soyabean processing.
8. Subsidies and finance schemes available for food processing unit, schemes under ministry of food processing, ministry of agriculture and other departments for finance as well as subsidy for entrepreneurs, MIS reporting, Clients management, maintenance of book accounts

Practical's

1. Study and gain knowledge about agro processing projects according to local potentiality.
2. Gain significant knowledge about credit system for financing the potential agro service projects by bank and financial institution
3. Gain knowledge on operation of different storage structure and commercial milling plants.
4. Gain knowledge about SSI agro and rural units and their operation
5. Gain knowledge about operation of ware house

Subject Name: PRACTICAL

1. Identification, handling and restraining of animals; Judging and culling; Feeding and ration formulation; Hatching, housing and management of poultry
2. Visit to livestock farms and Economics of livestock production.
3. To learn and gain knowledge about different methods of isolation and purification of microbial culture
4. Study and gain knowledge about the various components and their utilization in organic farming.
5. Preparation of quality compost material,
6. Study of earthworm and methods of vermicomposting
7. Gain significant knowledge about credit system for financing the potential agro service projects by bank and financial institution
8. Visit to corporate farming site and submission of project report on the same
9. Gain knowledge on operation of different storage structure and commercial milling plants.
10. Gain knowledge about operation of ware house
11. Gain knowledge about SSI agro and rural units and their operation

References

1. Agricultural micro biology-G.rangaswami and bagyaraj
2. Microbiology-R.P Singh
3. Text book of animal husbandry-G.C Banerjee
4. Hand book of animal husbandry-ICAR, New Delhi

Subject Name: MUSHROOM CULTIVATION

1. Importance of mushroom cultivation- equipments used in mushroom laboratory sterilization procedure used in mushroom laboratory
2. Preparation of culture media. Pure culture techniques- spawn production- mushroom cultivation
3. Paddy straw mushroom and milky mushroom.
4. Management of pests and diseases of mushroom

5. Methods of harvesting mushroom.
6. Post harvest treatment and preservation of mushrooms. Packaging and processing.
7. Design and layout of mushroom farm
8. Cost analysis of mushroom farm and preparation of projects.

Note: The Normal Rule and Regulation pertaining to the Examination and other issues will be applicable in Faculty of Science as per Arunachal University of Studies Act 2012, Subsequent Statute and Rules & Regulations.