

MOTHERHOOD UNIVERSITY, Roorkee

ENLIGHTENING WORLD

Syllabus

for

Diploma in Agriculture (D. Agri.)

[Academic Session 2020-21 onwards]



**Faculty of Agriculture
Motherhood University, Roorkee
District- Haridwar, Uttarakhand.**

STUDY AND EVALUATION SCHEME
OF
DIPLOMA IN AGRICULTURE

[w.e.f Academic Session 2020-21 onwards]

SUMMARY

Programme	Diploma in Agriculture
Duration	One year full time
Medium	English and Hindi
Credits	43

MOTHERHOOD UNIVERSITY, ROORKEE

DIPLOMA IN AGRICULTURE

Sr. No.	Subject Code	Subject Name	Effective Teaching				Evaluation Scheme		
			L	T	P	Credits	Internal Assessment	End Term	Total Marks
			Hours/week						
1	MUDAG 101	Agro Ecological Situations	1	0	1	2	50	50	100
2	MUDAG 102	Soil Health Management	2	0	1	3	50	50	100
3	MUDAG 103	Rainfed Farming	2	0	1	3	50	50	100
4	MUDAG 104	Seed & Seed Production	2	0	1	3	50	50	100
5	MUDAG 105	Irrigation Techniques and their Management	2	0	1	3	50	50	100
6	MUDAG 106	Weed Management	1	0	1	2	50	50	100
7	MUDAG 107	Farm Implements and Machinery	2	0	1	3	50	50	100
8	MUDAG 108	Pest and disease Control in Agriculture	3	0	1	4	50	50	100
9	MUDAG 109	Crop Production Technology of major local crops	3	0	1	4	50	50	100
10	MUDAG 110	Acts, Rules and Regulations related to Agricultural Inputs	2	0	1	3	50	50	100
11	MUDAG 111	Production Economics and Farm Management: Course Outline	2	0	0	2	50	50	100
12	MUDAG 112	Agricultural Marketing (Marketing, Markets and Institutions)	3	0	0	3	50	50	100
13	MUDAG 113	Schemes related to Agricultural Sector	2	0	0	2	50	50	100
14	MUDAG 114	Extension Approaches and Methods	2	0	1	3	50	50	100
15	MUDAG 115	Other Agro Ecological Situations r Optional Areas based on requirement	3	0	0	3	50	50	100
Total			32	0	11	43	750	750	1500

Diploma in Agriculture

1. Agro Ecological Situations

1. Overview of Agricultural Production Systems
2. Agro-ecological situation and Agro-eco system approach
3. Weather parameters and their impact on Agricultural Production
4. Suitable cropping systems for the existing Agro-ecological situation
5. Relevance of Agro-meteorological information for crop production

Practical: Visit to a Agro-meteorological laboratory to acquaint with various weather parameters

2. Soil Health Management

1. Soil-Profile, Types, Characteristics, Properties (Physical, Chemical and Biological)
2. Importance of soil testing, method of soil sampling, interpretation and farm advisory, based on soil test results.
3. Problematic soils and their management
4. Macro-Micro Nutrient deficiencies and their symptoms
5. Integrated Nutrient Management
6. Liquid Fertilizers
7. Plant Growth Regulators

Practical: Hands on experience in Soil sampling; Hands on experience in interpretation and advice based on soil test results; Field visit to farmers' field/Research; Station/KVK/Biofertilizer/Vermicompost production units (four sessions); Identification of deficiency symptoms of different crops

3. Rainfed Farming

1. Crop planning in Rainfed Areas
2. Importance of Water Management in Crop Production
3. Natural Resource Management for Dryland Agriculture
4. Climate Change and adaptation strategies for Rainfed agriculture
5. Integrated watershed management

Practical: Visit to Watershed areas

4. Seed & Seed Production

1. Difference between seeds and grains
2. Importance of Quality Seeds in crop production
3. Seed treatment- Importance and procedure
4. Types of seeds
5. Seed storage and maintenance
6. Principles and practices of Seed Production
7. Seed Certification Process.

Practical: Hands-on-experience on Seed treatment, identification of different types of seeds based on various categories of labels, Germination test etc. Field visits to seed production plots

5. Irrigation Techniques and their Management

1. Basic Principles in irrigation
2. Water use Efficiency System and Methods of Irrigation

3. Installation and Management of Micro irrigation Systems (Sprinkler & Drip Irrigation)

4. Budget requirement for Installation of Micro Irrigation System

Practical: Visit to Progressive Farmers' Field to acquaint with drip and sprinkler system; Visit to Agro-Service Centers; Visit to field for identification of different weeds; Hands-on-experience on operation of farm implements, Plant protection equipment and its maintenance

6. Weed Management

1. Importance of Weed management in crops

2. Types of Weeds

3. Integrated Weed Management (Physical, Chemical, Biological method)

Practical: Exposure to various weeds and weed management practices

7. Farm Implements and Machinery

1. Farm Mechanization Scope and Importance

2. Name and utility of various farm implements and machinery

3. Sources and approximate cost of Farm implements and machinery

4. Repairs and maintenance of farm implements and Machinery

5. Custom hiring Centers: Concept and Importance in the present context as a business model

Practical: Hands-on-experience in handling farm implements and equipments

8. Pest and disease Control in Agriculture

1. Importance of Pest and Disease Control in Agriculture

2. Difference between Harmful and Beneficial insects

3. Insect and Disease Symptoms

4. Difference between Nutrition deficiency and Disease Symptoms

5. Classification of Pesticides

6. New Generation Pesticides

7. Compatibility of Agro Chemical

8. Storage pests and their Management

9. Harmful effect of indiscriminate use of agricultural inputs

10. Integrated Pest Management

11. Residual Analysis

12. Precautionary Measures in procurement, handling and application of Chemicals and other agricultural inputs

13. First Aid

Practical: Hands-on-experience on differentiating the pest and diseases by drawing, coloring and labelling of insects and their damages, disease symptoms and nutrient deficiencies; Field Visit - Identification of useful and harmful insects/Identification of symptoms of diseases; Visit to Bio-control Laboratory; Agro-ecological situation analysis in field by the participants; Visit to warehouses/godowns/market yards; Hands-on-experience on handling of agro chemicals during their application, and usage of first aid during unforeseen situations

9. Crop Production Technology of major local crops

1. Paddy, Wheat, Jowar, Bajra, Maize, Millets.

2. Pulses: Red gram, Green gram, Black gram and Bengal gram
3. Oilseeds: Groundnut, Sesamum, Safflower, Sunflower, Soybean and Castor
4. Commercial Crops: Cotton, Chillies, Sugarcane, Turmeric etc. Horticulture Crops: Mango, Guava, Apples, Stone fruits, Kiwi.
5. Vegetables: Off Season vegetables, Peas, Beans, Bell Pepper, Tomato, Potato, Cucurbits
6. Protected Cultivation
7. Medicinal and Aromatic Plants.
8. Floriculture,
9. Landscaping and Lawn maintenance,

Practical: Visit to Progressive Farmers' Field to show the standing crops which are predominantly grown in the concerned district

10. Acts, Rules and Regulations related to Agricultural Inputs

1. Seed Act
2. Insecticide Act
3. Fertilizer Control Order
4. Essential Commodity Act
5. Consumer Protection Act, Food Adulteration Act
6. APMC Act
7. Contract Farming
8. Sales Tax / VAT etc.
9. Benefits of above Acts, Rules and Regulations related to Agricultural Inputs to farmers and for the traders

Practical: Presentation by the participants on Acts, Rules and Regulations related to Agricultural Inputs

11. Production Economics and Farm Management: Course Outline

- Application of farm management principles
- Computation of cost concepts
- Methods of consumption of depreciation
- Analysis of net worth statement
- Farm inventory analysis
- Preparation of farm plans and budgets
- Types of farms records and accounts
- Preparation of profit and loss account
- Break even analysis
- Cost of cultivation and economic analysis of different crops and livestock enterprises

12. Agricultural Marketing (Marketing, Markets and Institutions): Course outline

I. A. What is marketing? B. Analysis of the food marketing system C. Production and Marketing D. Consumption and Marketing E. Processing and manufacturing F. Wholesaling and retailing G. Storage and transportation

II. Price and marketing cost and market operations A. Price and the exchange functions B. Farm prices C. Marketing costs D. Market information E. Futures market

III. Alternative market structures and institutions A. Market structure B. Market power C. Integration and coordination D. Cooperatives E. Food market regulation F. Market development and demand expansion

13. Schemes related to Agricultural Sector

Major flagship programs of Central/State Governments related to agricultural development. Title, Purpose/objectives components, which are eligible beneficiaries and benefits

14. Extension Approaches and Methods

1. Communication Skills
2. Negotiation
3. Motivation
4. Counseling: Application of these concepts for convincing the farmers for better adoption of technologies
5. Extension Reforms: Concept, Organizational Mechanism and role of input dealers in the organizational structure
6. Cyber Extension: Concept, various Agricultural information sources, How to access and disseminate agricultural related information to the farmers
7. Market-led Extension: Meaning, Role of Input dealers in promoting forward and backward linkages of farmers
8. Extension Methods such as Training, Demonstration, Exhibition, Kisan melas (purpose and procedure for organizing each method), ICT based farm advisories.

Practical: Hands-on-experience in using computers for accessing agriculture and market information through AGMARKNET portal, Hands-on-experience in designing, developing and delivery of messages related to crop production, weather and market information through mobile phones Hands-on-experience in organizing extension methods, visit to organized retail centers

15. Other Optional Areas based on requirement

1. Rural Credit – Micro Finance
2. Crop Insurance
3. Use of Plastics in Agriculture
4. Nursery Management
5. Precision farming
6. SRI Cultivation
7. Value chain management
8. Stress management
9. Values and ethics in business
10. Kisan Call Centre