Syllabus for Farmer (Organic Cultivation)

Course Name	Farmer (Organic Cultivation)
Sector	AGRICULTURE
Course Code	AGR/2024/FAOC/393
Level	4
Occupation	Farmer (Organic Cultivation)
Job Description	Farmer (Organic Cultivation) provides expertise in production of various crops in his own land or organic product supplying companies. They are the grass root level expert person directly involved in quality organic inputs production, implement organic package of practices of various crops, packaging, labeling and arrangement of marketable organic crops produced in organic farming system under the supervision of managerial personnel.
Course Duration	**Total Duration 480 Hrs (T-120, P-240, OJT-60 and ES-60)**
Trainees' Entry Qualification	• 12th grade pass OR • Completed 2nd year of 3-year diploma (after 10th) and pursuing regular diploma OR • 10th grade pass plus 2-year NTC OR • 10th grade pass plus 1-year NTC plus 1 year NAC OR • 8th pass plus 2-year NTC plus 1Year NAC plus CITS OR • 10th grade pass and pursuing continuous schooling OR • 10th Grade Pass with 2 year relevant experience OR • Previous relevant Qualification of NSQF Level 3.0 with minimum education as 8th Grade pass with 3 year relevant experience OR • Previous relevant Qualification of NSQF Level 3.5 with 1.5 year relevant experience
Trainers Qualification	i) M. Sc. (Ag) in Agronomy /Horticulture OR ii) B. Sc. (Hons) Agriculture/ Horticulture with 1 year Experience in crop cultivation.

Structure of Course:

Module No.	Module name	Outcome	Theory (Hrs)	Practical (Hrs)	Total (Hrs) [Multiple of 30]
1	Introduction to organic farming	Describe the principles, methods and benefits of organic farming.	10	20	30
2	Predesigned programming of organic farming for various crops	Implement predesigned programming of organic farming for various	10	20	30

Module No.	Module name	Outcome	Theory (Hrs)	Practical (Hrs)	Total (Hrs) [Multiple of 30]
		crops.			
3	Seed selection and planting materials	Select seeds and planting materials for various crops under organic management.	10	20	30
4	Nutrition Management	Identify sources of supplying nutrition of soil through natural resources reuse and recycling.	20	40	60
5	Organic Crop Husbandry	Recognize Organic means of husbandry of crops through water management, intercultural operation etc.	10	20	30
6	Management of weeds, pests and diseases.	Identify suitable integrated management of weeds, pests and diseases by maintaining natural ecology.	20	40	60
7	Harvesting and post – harvesting	Execute harvesting and post harvesting practices.	20	40	60
8	Quality assurance and Organic certification	Ensure Quality assurance along with proper Organic certification.	10	20	30
9	E-Commerce	Perform online business with digital marketing, logistics, and legal considerations. **MEP/2501/OC6**	10	20	30
10	OJT	Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	--	60	60
11	Employability Skill	As per guided curriculum	60	--	60
		TOTAL:	180	300	480

SYLLABUS:

Module No. 1: Introduction to organic farming

Outcome: Describe the principles, methods and benefits of organic farming.

Theory Content:

1. Definition, concept and scope of organic farming
2. Different types of organic farming
3. Detrimental effect of conventional farming on health and environment
4. Comparative study of conventional farming and organic farming
5. Advantage and disadvantages of organic farming
6. Area and distribution of organic farming in India and West Bengal

Practical Content:

1. Demonstrate the procedure of organic farming
2. Identify different types of organic farming
3. Compare conventional and organic farming methods in a demonstration plot.
4. Identify conversion period from conventional to organic farming

Module No. 2: Predesigned programming of organic farming for horticultural crops

Outcome: Implement predesigned programming of organic farming for cultivation of crops.

Theory Content:

1. Planning of production of organic crops in a traditional farming situation.
2. Choice of organic system responsive crops and cropping systems
3. Inclusion of intercropping, mixed cropping, relay cropping, trap cropping and their advantages
4. Plan for crop based modification of land

Practical Content:

1. Layout and area demarcation of organically grown and conventionally grown crops
2. Draw free hand sketches of different components of an organic farm.
3. Modification of land for better establishment of crops

Module No. 3: Seed selection and planting materials

Outcome: Select seeds and planting materials (vegetables, fruit, flower crops) for various crops under organic management.

Theory Content:

1. Identification organic system responsive locally adapted varieties of seeds and planting materials (vegetables, fruits, flower crops) of various crops.
2. Characteristics of crops suitable in organic system
3. Choice of seeds and planting materials of pest and disease resistant varieties
4. Seed treatment with different bio-inputs (biofertilizer, biopesticides)
5. Seed treatment with ITKs (bijamrita, panchagavya)
6. Different methods of seed treatment
7. Advantages of seed treatment

Practical Content:

1. Identification of different varieties of seed of crops
2. Identification of different seed treating organic inputs

3. Demonstration of method of seed treatment with Rhizobium biofertilizer
4. Preparation of bijamrita
5. Demonstration of method of seed treatment with bijamrita
6. Preparation of panchagavya
7. Demonstration of method of seed treatment with panchagavya

Module No. 4: Nutrition Management

Outcome: Identify sources of supplying nutrition of soil through natural resources reuse and recycling.

Theory Content:

1. Different sources of nutrients used in organic farming
2. Green manuring, green leaf manuring, azolla and blue green algae and their amount of nutrient contribution
3. Concentrated organic nutrient input – different oilcakes (mustard ,neem, karanj, groundnut,linseed), nutrient content, method and doses of application
4. Other concentrated organic nutrient input –blood meal, horn and hoof meal
5. Bulky organic manures (FYM, compost, vermicompost) -preparation, nutrient content, method and doses of application
6. Liquid manure (ITKs-Jibamrit, sanjibani, amritpani, panchgavya, vermiwash, diluted cow urine) - preparation, nutrient content, method and doses of application
7. Biofertilizers –crop specificity use, methods, time and doses of application
8. Marketed organic nutrient input –sea weed extract, humic acid

Practical Content:

1. Identification of seed and green plant of green manure crop (dhaincha, khesari, senji) and green leaf manuring plants (subabul, Glyricidia), ,raising crop, incorporation in soil with right age of the crop
2. Identification of different oilcakes ,their application in soil of various crops
3. Identification of different composts. ,their application in soil of various crops .
4. Different methods of preparation of compost –NADEP, Banglore method, Biodung compost.
5. Method of preparation of FYM and it's application technique in soil.
6. Method of preparation of vermicompost – selection of vermiworm ,vermiculture, vermin feed making,vermibed making, moisture maintenance, harvesting and application to the field of various crops.
7. Application of biofertiliers according to different horticultural crops
8. Value addition of composts with biofertilizers (Rhizobium, Azospirillum, Azotobactor etc.), biopesticides (Trichoderma sp.,Pseudomonus flurosence etc.

Module No. 5: Organic Crop Husbandry

Outcome: Recognize Organic means of husbandry of crops through water management, intercultural operation etc.

Theory Content:

1. Rain water management –*in situ* water harvesting, moisture conservation through mulching, cover crops, mixed cropping etc.
2. Different methods of irrigation according to various crops
3. Application of water – timing / stages of crops / irrigation interval with quantity of irrigation water ,
4. Pressurized system of irrigation – drip and sprinkler and choice of their use based on crops, slope of the land and crop geometry
5. Intercultural operation of different crops based on nature of rate of early growth, field water distribution, method of irrigation.

Practical Content:

1. Use of mulch (polythene, crop residue, cover crop) for moisture conservation

2. Observation on different methods of irrigation in the field and draw a layout
3. Measurement of quantity of irrigation water use by measuring scale, water meter etc.
4. Observation of application of water through drip and sprinkler system
5. Identification of different parts of drip and sprinkler system.
6. Identification of different small implements used for intercultural operation.

Module No. 6: Management of weeds, pests and diseases.

Outcome: Identify suitable integrated management of weeds, pests and diseases by maintaining natural ecology.

Theory Content:

1. Common weeds infestation in various crops – crop weed competition, extent of damage and yield loss
2. Different methods of weed control – cultural, mechanical, soil solarization ,biological and bio-herbicidal
3. Major pest incidences of horticultural crops– symptoms, stage of the crop, extent of damage and crop loss
4. Different methods of pest management – cultural (resistant variety ,intercropping,mixed cropping,trap cropping ,deep summer ploughing,),mechanical,biological (Trichogramma)and bio-pesticide / botanical pesticides including ITKs (Nimastra,Brahmastra,Agnestra)
5. Major disease infestation of crops-symptoms ,stage of the crop, extent of damage and crop loss
6.Different methods of disease management -– cultural (resistant variety ,intercropping,mixed cropping,trap cropping ,deep summer ploughing,),mechanical ,biological (Trichoderma sp.,Pseudomonas ,Bacillus thuringiensis etc.) and bio-pesticide / botanical pesticides including ITKs (Nimastra, Brahmastra, Agnestra)

Practical Content:

1. Identification of weeds under various crops – counting weed population (number / sq.m.)
2. Observation on weed population under intercropping/mixed cropping system
3. Application of bio herbicides /botanical herbicides (bamboo leaf and rhizome extract ,perthenium extract)
3. Identification of common pests of crops – their symptoms ,extent of damage etc.
4. Observation on cultural management,(intercropping,mixed cropping,trap cropping ,deep summer ploughing,) .
5. Application of bio-pestcides (predators and parasites) /botanical pesticides (neem oil,neem seed kernel extract ,karanja leaf extract),
6. Preparation of various ITKs and their application
7. Identification of common diseases of crops – their symptoms ,extent of damage etc.
4. Observation on cultural management,(intercropping,mixed cropping,trap cropping ,deep summer ploughing,removal of infected plant debris) .
5. Application of bio-pestcides /botanical pesticides (neem oil,neem seed kernel extract ,karanja leaf extract),
6. Preparation of various ITKs and their application.
7. Management of viral diseases by control of their vectors using various types of traps
8. Identification of different appliances used for pest/ disease control.

Module No. 7: Harvesting and post –harvesting

Outcome: Execute harvesting and post harvesting practices.

Theory Content:

1. Harvesting of crops –based on nature of their use, appropriate stage of the crop, market demand and distance from market.
2. Exploring preservation products from harvested produce
3. Different methods of grading of crops
4. Packaging of harvested crops with organic packaging materials
5. Development of organic package of various crops in organic system.
6. Development of organic package of non-crop components.
7. Maintain proper labelling on the organic products.
8. Marketing of organic crop products

Practical Content:

1. Conduct harvest operation of various crops
2. Observation on yield and quality between optimum time and improper time.
3. Preparation of preservation products of crops.
4. Increase shelf life of flower crops, leafy vegetables, different perishable fruit crops, etc. by adopting suitable techniques.
5. Conduct grading operation of crops
6. Packaging of different crops – techniques based on demand of vendors
7. Application of organic package of practices in various crops and other non-crop components.
8. Study of marketing of organic crops in different markets and organic product outlets.

Module No. 8: Quality assurance and Organic certification

Outcome: Ensure Quality assurance along with proper Organic certification.

Theory Content:

1. Concept of organic certification, types of organic certification.
2. Steps of organic certification, duration of validity of certificate
3. Different organic logo (India organic , PGS organic and PGS green)
4. Benefits of organic certification
5. Comparative study of grower group certification and PGS (participatory guarantee system)
6. Permitted , restricted and not-permitted inputs as per NPOP manual

Practical Content:

1. Application procedure for organic certification
2. Submission of documents in prescribed format to certification agency
3. Filling of field history form
4. Submission of check list to the inspector
5. Filling up of non-compliance form
6. Study of PGS certification -
7. Comparative study of national standard under third party certification and PGS certification

Module No. 9: E-Commerce

Outcome: Perform online business with digital marketing, logistics and legal considerations

Content:

1. Introduction to E-Commerce
   a. Understanding the concept of e-commerce
   b. Historical background and evolution of online businesses
   c. Types of e-commerce models (B2B/B2C)

2. E-Commerce Infrastructure
   a. Setting up an online store
   b. Payment gateways and security
   c. E-commerce platforms and tools

3. Digital Marketing for E-Commerce
   a. Search Engine Optimization (SEO) for e-commerce
   b. Social media marketing and advertising
   c. Content marketing strategies

4. E-Commerce Strategies
   a. Customer relationship management (CRM)
   b. Creating compelling product listings
   c. Understanding consumer behaviour online

5. Logistics and Fulfilment
   a. Order processing and fulfilment
   b. Inventory management
   c. Shipping and delivery options

6. Legal and Ethical Aspects of E-Commerce

a. E-commerce regulations and compliance
b. Privacy and security considerations
c. Ethical issues in e-commerce

7. Case Studies and Best Practices

a. Analysing successful e-commerce businesses
b. Learning from real-world case studies
c. Best practices for sustainable e-commerce

Module No. 10: OJT

Outcome: Work in real job situation with special emphasis on basic safety and hazards in this domain

Practical Content:

Assessor will check report prepared for this component of Practical training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor for **60 Hours.**)

Module No. 11: Employability Skills **(60 Hrs)**

Key Learning Outcomes

Introduction to Employability Skills Duration: 1.5 Hours

After completing this programme, participants will be able to:

1. Discuss the Employability Skills required for jobs in various industries
2. List different learning and employability related GOI and private portals and their usage

Constitutional values - Citizenship Duration: 1.5 Hours

3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
4. Show how to practice different environmentally sustainable practices.

Becoming a Professional in the 21st Century Duration: 2.5 Hours

5. Discuss importance of relevant 21st century skills.
6. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
7. Describe the benefits of continuous learning.

Basic English Skills Duration: 10 Hours

8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
9. Read and interpret text written in basic English
10. Write a short note/paragraph / letter/e -mail using basic English

Career Development & Goal Setting Duration: 2 Hours

11. Create a career development plan with well-defined short- and long-term goals

Communication Skills Duration: 5 Hours

12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.
13. Explain the importance of active listening for effective communication
14. Discuss the significance of working collaboratively with others in a team

Diversity & Inclusion Duration: 2.5 Hours

15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
16. Discuss the significance of escalating sexual harassment issues as per POSH act.

Financial and Legal Literacy Duration:5 Hours

17. Outline the importance of selecting the right financial institution, product, and service
18. Demonstrate how to carry out offline and online financial transactions, safely and securely

19. List the common components of salary and compute income, expenditure, taxes, investments etc.
20. Discuss the legal rights, laws, and aids

Essential Digital Skills Duration: 10 Hours

21. Describe the role of digital technology in today's life
22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely
24. Create sample word documents, excel sheets and presentations using basic features
25. utilize virtual collaboration tools to work effectively

Entrepreneurship Duration: 7 Hours

26. Explain the types of entrepreneurship and enterprises
27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan
28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement
29. Create a sample business plan, for the selected business opportunity

Customer Service Duration: 5 Hours

30. Describe the significance of analyzing different types and needs of customers
31. Explain the significance of identifying customer needs and responding to them in a professional manner.
32. Discuss the significance of maintaining hygiene and dressing appropriately

Getting Ready for apprenticeship & Jobs Duration: 8 Hours

33. Create a professional Curriculum Vitae (CV)
34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
35. Discuss the significance of maintaining hygiene and confidence during an interview
36. Perform a mock interview
37. List the steps for searching and registering for apprenticeship opportunities

Learning Outcome – Assessment Criteria

Module No.	Outcome	Assessment Criteria
1	Describe the principles, methods and benefits of organic farming.	**After completion of this module students will be able to:** 2.1 Explain concept of organic farming and it's relevance 2.2 Explain- Basic difference between organic farming and conventional farming 2.3 Explain components of organic farming 2.4 Explain advantages and disadvantages of organic farming
2	Implement predesigned programming of organic farming for various crops.	**After completion of this module students will be able to:** 3.1 Demonstrate the programming of an organic farm 3.2 Draw free hand layout of the organic farm showing different components 3.3 Identification of organic management responsive crops and cropping systems 3.4 Selection of other components of farming system based on resources in an organic farm

Module No.	Outcome	Assessment Criteria
3	Select seeds and planting materials for various crops under organic management.	**After completion of this module students will be able to:** 4.1 Identify organic system responsive locally adapted varieties of seeds and planting materials of crops 4.2 Identify location specific need based disease and pest resistant varieties 4.3 Identify bio-inputs (like biofertilizer, biopesticides) suitably used as seed treatment inputs 4.4 Identify locally available ITKs like Bijamrita,Panchagavya) for treatment of seeds and planting materials 4.5 Explain various methods of seed and planting material treatments 4.6 Identify sources of organic seeds and planting material of crops
4	Identify sources of supplying nutrition of soil through natural resources reuse and recycling.	**After completion of this module students will be able to:** 5.1 Prepare list of different sources of supplying nutrition of soil from on –farm. 5.2 Identify different green manuring / green leaf manuring plants and explain their method of use. 5.3 Identify different types of biofertilizers and explain their method of application. 5.4 Identify different types of market available oilcakes and explain their method of application with comparative analysis of their nutrient content. 5.5 Explain method of preparation of various types of composts with their nutritive values. 5.6 Explain different types of locally available ITKs (like Jivamrita,Sanjibani,Amritpani,Panchagavya)used as liquid manure
5	Recognize Organic means of husbandry of crops through water management, intercultural operation etc.	**After completion of this module students will be able to:** 6.1 Explain different field methods of management of water in various crops 6.2 Application of irrigation water at proper quantity and timing/ stages of the crop 6.3 Identify different parts of pressurized system of irrigation (drip/sprinkler) 6-4 Explain in-situ rain water harvesting and moisture conservation through mulching ,cover crop etc. 6.5 Explain importance of intercultural operations of horticultural crops
6	Identify suitable integrated management of weeds, pests and diseases by maintaining natural ecology.	**After completion of this module students will be able to:** 7.1 Identify various weeds infested in different crops 7.2 Explain different methods of weed control in organic system of cropping 7.3 Identify major pests of various crops 7.4 Suggest management of important pests in

Module No.	Outcome	Assessment Criteria
		organic system 7.5 Identify major diseases of various crops 7.6 Explain management of important diseases in organic farming
7	Execute harvesting and post harvesting practices.	**After completion of this module students will be able to:** 8.1 Identify the appropriate stage of harvesting of different crops. 8.2. Explain different methods of harvesting of crops based on use and distance from the market 8.3 Explain importance of grading , packaging and labeling of harvested crops 8.4 Explain appropriate organic package of practices of different crops 8.5 Explain adoption of organic package of practices of different fruit crops. 8.6 Explain adoption of organic package of practices of different flower crops
8	Ensure Quality assurance along with proper Organic certification.	**After completion of this module students will be able to:** 9.1 Explain various methods of available organic certification 9.2 Identify procedures and time of application for organic certification 9.3 Explain benefits of organic certification.
9	Perform online business with digital marketing, logistics, and legal considerations	**After completion of this module students will be able to:** 8.1 Explain e-commerce through clear examples 8.2 Trace the development of online businesses and assess their impact on current e-commerce practices 8.3 Identify various e-commerce models 8.4 Set up a online store, selecting appropriate platforms and tools 8.5 Implement digital marketing strategies Apply customer relationship management techniques to enhance customer satisfaction and retention 8.6 Analyze logistics and fulfillment processes including order processing, inventory management and shipping options.
10	OJT	Assessor will check report prepared for this component of Practical training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor for 60 Hours.)
11	Employability Skill	As per guided curriculum

List of Tools, Equipment & materials needed for 30 Trainees (Practical)

S No.	Name of the Tool & Equipment	Specification	Quantity
1.	Land for cultivation	Fertile, high or medium high land	6(six) bighas
2.	Power tiller		one
3.	Compost / FYM		20 ton
4.	Seed drill	According to specific crop	two
5.	Wheel hoe /nail weeder	According to specific crop	two
6.	Sickle		20
7.	Sprayer	15 L	2
8.	Measuring tape	50 m	2
9.	Spade		10
10.	Processing machine	According to specific crop	one
11.	Sewing machine		one
12.	Balance	0.5 – 100 kg	two
13.	Balance	0.01 – 100 g	one
14.	vermicompost		2.0 ton
15.	Different Biofertilizers (N,P,K carrier)		5 kg each
16.	Neem oil		10 litre
17.	Plastic rope		50 m
18.	Van rickshaw		one
19.	Seed bin (glass)		05
20.	Seed bin (aluminium)	50 kg capacity	10
21.	Seed and planting material of various crops		As per requirement

Marks Distribution

Outcome	Outcome Code	Total Th marks	Total Pr marks	Total OJT marks
Describe the principles, methods and benefits of organic farming.	AGR/0277/OC1	10	60	0
Implement predesigned programming of organic farming for various crops.	AGR/0277/OC2	10	70	0
Select seeds and planting materials for various crops under organic management.	AGR/0277/OC3	10	70	0
Identify sources of supplying nutrition of soil through natural resources reuse and recycling.	AGR/0277/OC4	30	80	0
Recognize Organic means of husbandry of crops through water management, intercultural operation etc.	AGR/0277/OC5	10	70	0
Identify suitable integrated management of weeds, pests and diseases by maintaining natural ecology.	AGR/0277/OC6	30	80	0
Execute harvesting and post harvesting practices.	AGR/0277/OC7	30	80	0
Ensure Quality assurance along with proper Organic certification.	AGR/0277/OC8	10	70	0
Perform online business with digital marketing, logistics, and legal considerations.	MEP/2501/OC6	10	70	0
Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	AGR/0277/OC9	0	0	150
Employability Skills – 60 Hrs	DGT/VSQ/N0102	50	0	0