Syllabus on Vocational Education and Training Course (VTC)

Paper Title	**: Organic Farming -I**
CODE	**: VTC: 240.1**
Number of Credits	**: 4**
Semester	**: III**
No. of Theory Hours Per Week	**: One (1 hour)**
No. of Practical Hours per Week	**:Three (3 Hours)**

Outline of the Paper:

Type of Course	Units in the VTC	Hours	Credits	Total Marks	Distribution of Marks (as per OC-8)			
					In-Semester		End-Semester	
					Theory	Practical	Theory	Practical
Organic Farming-I	Unit-I Theory (25 Marks)	15	4	100	25			
	Unit-II to IV Theory (75 Marks)	90				15		60

Marks Distribution	**: Internal Assessment: 40** **: External Assessment: 60**
Course Objectives	**1.** To make students understand the concept, principles and practices of organic farming
Course Learning Outcome	At the end of the course students will able to: 1. explain the concepts and principles of organic farming 2. demonstrate on the preparation and use of organic inputs 3. describe the role of microbes through bio-fertilizer on plant growth promotion
Unit I: (Theory) **15 Hours**	• Organic farming, concept, principles and its scope in India and NE region; prospects and constraints of organic farming in India and NE region; • Organic vs conventional farming; Traditional knowledge on organic management; Organic management of soil-sources of plant nutrients, préparation and uses of different types of composts, FYM, vermicompost, green manures, oil cakes, bio-fertilizers etc
UNIT-II: (Practical) **30 Hours**	• Identification of on-farm and off-farm organic inputs. • . Preparation of FYM. • Preparation of Berkeley Method of Composting. • Preparation of Indore method of composting. • Preparation of Bangalore method of composting.
UNIT-III: (Practical) **30 Hours**	• Identification of natural earth-worms • Study on different oil cakes and nutrient contents • Identification of green manuring crops and its uses • Visit to organic manures production units/farmers.

	• Preparation of vermicompost and vermi-wash.
UNIT-IV: (Practical) 30 Hours	• Quality analysis of different bio-fertilizers. • Methods of bio-fertilizer application. • Enrichment of FYM/compost/vermicompost. • Visit to the bio-fertilizer production plants.
Suggested Readings	1. Organic Horticulture; Principles, Practices and Technologies, Westville, New Delhi. 2. Palaniappan SP and Annadurai K 2006. Organic Farming: Theory and Practices. Scientific Publishers, Jodhpur, India. 3. Panda SC 2011. Organic Farming for sustainable agriculture.Kalyani Publishers, Jalandhar. 4. Rangathan LS 2006. Vermitechnology. Agrobios, India. 5. Sharma AK 2005. A Handbook of Organic Farming. Agrobios, India. 6. Singh HP and George V Thomas 2014. Singh Y. 2020. Practical manual on Principles of organic farming. Rani Laxmi Bai Central Agricultural University, Jhansi. 7. Thapa U and Tripathy P 2010. Organic Farming in India-Problems and Prospects. Agro Publishing Academy, Udaipur. 8. Walia SS and Narwal RK. 2022. Principles of organic farming. New India Publishing Agency, New Delhi
Requirements	**Soil Management** • Sources of Plant Nutrients • Preparation and Use of Different Types of Composts, FYM, Vermicompost, Green Manures, Oil Cakes, Bio-Fertilizers **Organic Inputs** • Identification of On-Farm and Off-Farm Organic Inputs • Preparation Techniques **Composting Methods** • Farmyard Manure (FYM) • Berkeley Method • Indore Method • Bangalore Method **Vermiculture** • Identification of Natural Earthworms

	• Preparation of Vermicompost and Vermiwash **Green Manuring** • Identification of Green Manuring Crops • Uses and Benefits **Organic Pest, Disease, and Weed Management** • Biological Control of Pests • Biopesticides • Cultural Methods • Integrated Pest Management (IPM) **Natural Farming Components** • Panchgavya, Beejamrutam, Jeevamrutam, Ghanajeevamrutam, Dravajeevamrutam, Neemastra **Bio-Fertilizers and Bio-Pesticides** • Quality Analysis • Application Methods • Enrichment Techniques **Any other items as and when required**
Qualified Instructors	Instructors with experience in Organic Farming Certifications or relevant qualifications in Organic Farming

Paper Title	**: Organic Farming-II**
CODE	**: VTC: 260.1**
Number of Credits	**: 4**
Semester	**: IV**
No. of Theory Hours Per Week	**: One (1 hour)**
No. of Practical Hours per Week	**: Three (3 Hours)**

Outline of the Paper:

Type of Course	Units in the VTC	Hours	Credits	Total Marks	Distribution of Marks (as per OC-8)			
					In-Semester		End-Semester	
					Theory	Practical	Theory	Practical
Organic Farming-II	Unit-I Theory (25 Marks)	15	4	100	25			
	Unit-II to IV Theory (75 Marks)	90				15		60

Marks Distribution	**: Internal Assessment: 40** **: External Assessment: 60**
Course Objectives	To impart knowledge on organic ways of pest, disease and weed management, use of different indigenous, cultural and natural methods soil fertility and pest management
Course Learning Outcome	After completion of the course students are able to: 1. identify and use different biological pest and disease management techniques 2. demonstrate hands on experience on preparation of bio-fertilizers, bio-control agents and other natural sources of plant nutrition 3. use Indigenous Technical knowledge (ITK) and natural farming components.
Unit I: (Theory) **15 Hours**	• Organic management of pests, diseases and weeds: biological control of pests; biopesticides; cultural methods, crop rotation, mixed farming, trap cropping, companion cropping, smothering crops, bait traps, light traps, bird purchase etc.; • Trichodermamass multiplication technique; soil solarization- types, methods and advantages; • Indigenous formulations for disease and pest management. Bio-pesticides. • Cultural and biological weed control methods. • Role of natural farming components on soil fertility and crop pest management.
UNIT-II: (Practical) **30 Hours**	• Visit to organic clusters and bio-control labs. • Study and maintenance of bio-fertilizer agents.

	• Methods of application of bio-pesticides. • . Preparation of plant-based pesticides (Neem oil, neem seed kernel, lantana etc.) • Biological weed control agents- multiplication and method of use.
UNIT-III: (Practical) 30 Hours	• Study and maintenance of bio-control agents. • Preparation and use of natural farming components - Panchgavya and beezamrutam. • Preparation and use of natural farming components - Jeevamrutam and Ghanajeevamrutam • Preparation and use of natural farming components - Dravajeevamrutam and Neemastra.
UNIT-IV: (Practical) 30 Hours	• Case studies of Indigenous Technical knowledge (ITK) for nutrient, insect, pest, disease and weed management. • Economic analysis of organic production system. • Study of post-harvest management in organic farming • Visit to organic farms to study the various components and their utilization
Suggested Readings	1. Chandra S, Narayan S, Narayan R, Kumar A and Wani JA. 2023. Natural Farming a rising concept. Satish serial publishing house, New Delhi. 2. Organic Horticulture; Principles, Practices and Technologies, Westville, New Delhi. 3. Palaniappan SP and Annadurai K 2006. Organic Farming: Theory and Practices. Scientific Publishers, Jodhpur, India. 4. Panda SC 2011. Organic Farming for sustainable agriculture. Kalyani Publishers, Jalandhar. 5. Singh Y. 2020. Practical manual on Principles of organic farming. Rani Laxmi Bai Central Agricultural University, Jhansi. 6. Thapa U and Tripathy P 2010. Organic Farming in India-Problems and Prospects. Agro Publishing Academy, Udaipur
Requirements	**Soil Management** • Sources of Plant Nutrients • Preparation and Use of Different Types of Composts, FYM, Vermicompost, Green Manures, Oil Cakes, Bio-Fertilizers **Organic Inputs** • Identification of On-Farm and Off-Farm Organic Inputs

	• Preparation Techniques **Composting Methods** • Farmyard Manure (FYM) • Berkeley Method • Indore Method • Bangalore Method **6Vermiculture** • Identification of Natural Earthworms • Preparation of Vermicompost and Vermiwash **Green Manuring** • Identification of Green Manuring Crops • Uses and Benefits **Organic Pest, Disease, and Weed Management** • Biological Control of Pests • Biopesticides • Cultural Methods • Integrated Pest Management (IPM) **Natural Farming Components** • Panchgavya, Beejamrutam, Jeevamrutam, Ghanajeevamrutam, Dravajeevamrutam, Neemastra **Bio-Fertilizers and Bio-Pesticides** • Quality Analysis • Application Methods • Enrichment Techniques **Any other items as and when required**
Qualified Instructors	• Instructors with experience in organic Farming • Certifications or relevant qualifications in Organic Farming

Paper Title	**: Organic Farming-III**
CODE	**:VTC: 360.1**
Number of Credits	**: 4**
Semester	**:VI**
No. of Theory Hours Per Week	**: One (1 hour)**
No. of Practical Hours per Week	**: Three (3 Hours)**

Outline of the Paper:

Type of Course	Units in the VTC	Hours	Credits	Total Marks	Distribution of Marks (as per OC-8)			
					In-Semester		End-Semester	
					Theory	Practical	Theory	Practical
Organic Farming-III	Unit-I Theory (25 Marks)	15	4	100	25			
	Unit-II to IV Theory (75 Marks)	90				15		60

Marks Distribution	**: Internal Assessment: 40** **: External Assessment: 60**
Course Objectives	To impart knowledge on different aspects of organic animal products, post-harvest management, organic certification, marketing and export.
Course Learning Outcome	After completion of the course students are able to: 1. describe different aspects of organic animal products 2. explain the post-harvest aspects of organic animal products. 3. examine marketing and economic potential of organic products 4. identify certification agencies and knowledge on certification procedures.
Unit I: (Theory) 15 Hours	• Aspects of Organic milk, fish, eggs and meat production; Initiatives taken by the central Govt., state governments, NGOs and other organizations like APEDA for promotion of organic agriculture in India; Post harvest management of organic products- Processing, labelling, storage and transport; Economic considerations and viability, marketing and export potential of organic products.; Operational structure of NPOP; Certification process and standards of organic farming
UNIT-II: (Practical) 30 Hours	• Livestock management in organic farm. • Organic fish production procedure and standards. • Organic egg production procedure and standards. • Organic meat production procedure and standards.
UNIT-III: (Practical) 30 Hours	• Study on regulatory authorities/agencies/organizations for the promotion of organic agriculture in India. • Study of quality parameters of organic produce. • Economic analysis of organic production system. 4. Visit to

	organic farms to study the various components and their utilization.
UNIT-IV: (Practical) 30 Hours	• Study on processing, labelling, storage and transport of organic products. • . Supply chain and marketing strategies of organic products. • Study on organic certification procedure. • Visit to organic certification agencies.
Suggested Readings	1. Gehlot G. 2005. Organic farming; standards, accreditation certification and inspection. Agrobios, India. 2. Lacal CT. 2018. Marketing of organic food produce. Delve publishing, Canada. 3. Palaniappan SP and Annadorai K. 2003. Organic farming, theory and practice. Scientific publ., India 4. Singh Y. 2020. Practical manual on Principles of organic farming. Rani Laxmi Bai Central Agricultural University, Jhansi. 5. Somasundaram E, Nadhini DU and Meyyapan, N. 2021. Principles of organic farming. CRC press, London.
Requirements	**Soil Management** • Sources of Plant Nutrients • Preparation and Use of Different Types of Composts, FYM, Vermicompost, Green Manures, Oil Cakes, Bio-Fertilizers **Organic Inputs** • Identification of On-Farm and Off-Farm Organic Inputs • Preparation Techniques **Composting Methods** • Farmyard Manure (FYM) • Berkeley Method • Indore Method • Bangalore Method **Vermiculture** • Identification of Natural Earthworms • Preparation of Vermicompost and Vermiwash **Green Manuring** • Identification of Green Manuring Crops • Uses and Benefits

	Organic Pest, Disease, and Weed Management • Biological Control of Pests • Biopesticides • Cultural Methods • Integrated Pest Management (IPM) **Natural Farming Components** • Panchgavya, Beejamrutam, Jeevamrutam, Ghanajeevamrutam, Dravajeevamrutam, Neemastra **Bio-Fertilizers and Bio-Pesticides** • Quality Analysis • Application Methods • Enrichment Techniques **Any other items as and when required**
Qualified Instructors	• Instructors with experience inOrganicFarming • Certifications or relevant qualifications in Organic Farming