

**Department of Agronomy  
Faculty of Agricultural Sciences  
University of the Punjab, Lahore  
Course Outline**



<b>Programme</b>	B.Sc. (Hons) Agriculture (Major: Entomology)	<b>Course Code</b>	<b>AGR-308</b>	<b>Credit Hours</b>	3 (2-1)
<b>Course Title</b>	<b>ORGANIC FARMING</b>				
<b>Course Introduction</b>					
<p>Organic farming is an integrated system of agricultural production based on ecological principles, promotion of biodiversity, biological cycles and organic matter recycling to maintain and improve soil fertility and environmental sustainability. The regulations for organic crop cultivation prohibit the use of chemo-synthetic pesticides, mineral fertilizers, growth promoters and Genetically Modified Organism. Indiscriminate use of these chemicals in conventional farming poses a serious threat to the quality of produce as well as the environment. Concern about food safety and security and environmental sustainability is increasing among scientist, administrator and environmentalist. In view of this, the course is designed to train students on organic farming practices, quality analysis of the products, environmental impact assessment, health benefit of the organic food etc. After successful completion of the course, the students should be able to design resource efficient farming system for small and marginal farmers for improving their economy while meeting the quality food demand in a sustainable environment.</p>					
<b>Learning Outcomes</b>					
<p>This course was design for students:</p> <ol style="list-style-type: none"> <li>1. To create awareness about Organic farming.</li> <li>2. To equip learners with the knowledge and skills necessary to practice sustainable agriculture and the production of healthy, organic food.</li> <li>3. To introduce the concept of organic ecosystem and learn about biological magnification &amp; its significance in present day scenario.</li> <li>4. To inoculate the importance of doing organic farming as the responsibility of every human being to ensure food safety, nutritional security and food security for the present as well as future generation, to achieve sustainable development for every nation.</li> </ol>					
<b>Course Content (Theory)</b>					<b>Assignments/Readings</b>
<b>Week 1</b>	<b>Unit-I</b>				Sharma, Arun K. 2002. A Handbook of Organic farming. Agrobios, India.
	1.1. Concept and terminology of organic farming				
	1.2. History and development of organic farming				
	1.3. Need of Organic farming in present context and future prospects- barrier				

<b>Week 2</b>	<b>Unit-II</b> 2.1. Quality of food and crop productivity under natural ecological systems	Sharma, Arun K. 2002. A Handbook of Organic farming. Agrobios, India.
	2.2. Key indicators of sustainable agriculture, organic farming and climate change	
<b>Week 3</b>	2.3. Different ecofriendly farming systems 2.3.1. Biological farming 2.3.2. Natural farming 2.3.3. Regenerative agriculture 2.3.4. Permaculture 2.3.5. Biodynamic farming.	Sharma, Arun K. 2002. A Handbook of Organic farming. Agrobios, India.
	<b>Unit-III</b> 3.1. Principles of organic agriculture	
	3.2. Relevance of organic farming to Pakistan, global agriculture and future prospects	
	3.3. Advantages	
	3.4. Barriers	
<b>Week 4</b>	<b>Unit-IV</b> 4.1. Input management 4.1.1. Compost production 4.1.2. Vermicomposting 4.1.3. Compost quality	Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
	4.2. Input management (cont.....) 4.2.1. Compost utilization 4.2.2. Marketing	
	4.3. Organic crop management 4.3.1. Field crops	
	<b>Unit-V</b> 5.1. Organic Crop Management (Cont.....) 5.1.1. Horticulture crops	
	5.2. Organic Crop Management (Cont.....) 5.2.1. Plantation crops	
<b>Week 5</b>	5.3. Plant protection measures 5.3.1. Biopesticides	Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
	<b>Unit-VI</b> 6.1. Plant protection measures (Cont.....) 6.1.1. Natural predators	
<b>Week 6</b>	6.2. Plant protection measures (Cont.....) 6.2.1. Cultural practice	Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
	6.3. Plant protection measures (Cont.....) 6.3.1. Mechanical control	
	<b>Unit-VII</b> 7.1. Rotation design for organic system	
<b>Week 7</b>	7.2. Transition to organic agriculture	Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
	7.3. Farming system	

<b>Week 8</b>	<b>Unit-VIII</b> 8.1. Organic Ecosystem & Their Concept 8.1.1. Structure and function 8.1.2. Productivity	Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
	8.2. Organic Ecosystem & Their Concept (Cont.....) 8.2.1. Decomposition 8.2.2. Nutrient cycling	
	8.3. Organic Ecosystem & Their Concept (Cont.....) 8.3.1. Eutrophication 8.3.2. Biological magnification	
<b>Week 9</b>	<b>MIDTERM EXAM</b>	
<b>Week 10</b>	<b>Unit-IX</b> 9.1. Improvement of soil health and organic matter	Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
	9.2. Improvement of soil health and organic matter (Cont.....)	
	9.3. Improvement of soil health and organic matter (Cont.....)	
<b>Week 11</b>	<b>Unit-X</b> 10.1. Organic nutrient sources and their fortification	Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
	10.2. Organic manures	
	10.3. Methods of composting	
<b>Week 12</b>	<b>Unit-XI</b> 11.1. Green manures 11.1.1 Bio fertilizers 11.1.2. Types 11.1.3. Methods of application 11.1.4. Benefits and limitations	Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
	11.2. Nutrient use in organic farming-scope and limitations	
	11.3. Nutrient management in organic farming	
<b>Week 13</b>	<b>Unit-XII</b> 12.1. Choice of crops and varieties in organic farming 12.1.1. Crop rotations 12.1.2. Need and benefits 12.1.3. Multiple cropping	Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
	12.2. Components of organic farming 12.2.1. Crop rotation 12.2.2. Maintenance and enhancement of soil fertility through biological nitrogen fixation	
	12.3. Components of organic farming (Cont.....) 12.3.1. Addition of organic manure and use of soil microorganisms 12.3.2. Crop residues 12.3.3. Bio-pesticide 12.3.4. biogas slurry	

	12.3.5. Waste	
<b>Week 14</b>	<b>Unit-XIII</b> 13.1. Maintenance of buffer zone	Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
	13.2. Organic Farm Management 13.2.1. Land preparation - Tools and Technique 13.2.1. Preparation of seed bed , manuring, sowing, watering and raising of seedling	
	13.3. Crop Management 13.3.1. Pest control: Cultural, Biological and Mechanical method 13.3.2. Integrated Pest Management(IPM) 13.3.3. Crop rotation: need and benefits 13.3.4. Harvesting and Post Harvesting Management	
<b>Week 15</b>	<b>Unit-XIV</b> 14.1. Certification and Marketing 14.1.1. Inspection, Certification & Labelling procedure 14.1.2. Marketing & Export	Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
	14.2. Processing, - economic consideration and viability	
	14.3. Standards of organic food and marketing	
<b>Week 16</b>	<b>Unit-XV</b> 16.1. Quality analysis of organic foods	Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
	16.2. Antioxidants and their natural source	
	16.3. Organic food and human health	

#### **Textbooks and Reading Material**

1. Sharma, Arun K. 2002. A Handbook of Organic farming. Agrobios, India.
2. Sathe, T.V. 2004, Vermiculture and Organic Farming. Daya Publishers.
3. Alvares, C. 1996. The Organic Farming Source Book. The Other India Press, Mapusa, Goa.
4. Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
5. S.P. Palaniappan, K. Annadurai, 1999. Organic Farming- Theory and Practice, Scientific Publishers, Jodhpur, India.
6. Dr. Pratiksha Raghuvanoki. Handbook of Organic Farming.
7. Organic Farming: The Ecological System- Agronomy Monograph 54, ASA, USA.
8. Subha Rao, N.S. 200, Soil Microbiology, Oxford & IBH Publishers, New Delhi
9. Dongarjal R. P. and Zade S.B. 2019. Insect Ecology and Integrated Pest Management, Akinik Publications, New Delhi.
10. Guideline of National Project on Organic Farming, Department of Agriculture and Cooperation, INM Division, Ministry of Agriculture, Govt. of India
11. Dushyent Gehlot. 2005. Organic Farming- standards, accreditation, certification and inspection. Agribios, India.

**Note:**

1. It is preferable to use latest available editions of books. Mention the publisher & year of publication.
2. The References/ bibliography may be in accordance with the typing manual of the concerned faculty/subject. Preferably follow APA 7<sup>th</sup> Edition publication manual.

### Teaching Learning Strategies

1. Multimedia
2. White Board
3. Group discussion
4. Quiz/Assignments
5. Demonstration/Activity

### Assignments: Types and Number with Calendar

1. Preparation of Organic Compost-Over ground compost, Pit compost, Liquid compost, Vermi compost (Mid-term)
2. Visit to Organic farm to study the various components, identification and utilization of Organic products (Final-term)

### Assessment

Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.