

DEPARTMENT OF AGRONOMY Faculty of Agricultural Sciences

University of the Punjab, Lahore



Course Outline

Programme	B. Sc. (Hons.) Agriculture (Agronomy)	Course Code	AGR-307	Credit Hours	3 (2-1)
Course Title AGRO-TECHNOLOGY OF FIELD CROPS					

Course Introduction

To comprehend crop husbandry of major field crops with special emphasis on critical production factors.

Learning Outcomes

On the completion of the course, the students will be able to:

- Understand the importance of food security 1.
- 2. Familiarize about major crops in depth
- Know about biotic and abiotic factors affecting growth and yield of crops 3.
- Train in different specific practices for each major crop 4.
- Develop capability to grow these crops successfully under varying soil and 5. environmental conditions
- 6. Able to address the problems of the crop growers of the region

	Course Content	Assignments/Readings	
Week 1	Theory 1.1 Food security 1.1.2 Food security (food availability, access, nutritional security), from different angles (history, policy, agronomy, food aid, agri. food chains, GMOs,organic, etc.) and different scales (global, national, household, individual);	Crop Production	
Week 2	2.1 Wheat 2.1.1 Origin, 2.1.2 History, 2.1.3 Morphology, 2.1.4 Adaptation, distribution, economic importance	Martin, J.H., R.P. Waldren and D.L. Stamp. 2006. Principles of Field Crop Production, 4 th Ed., The Macmillan	
Week 3	2.1.5 Agro-technology of wheat crop 2.1.6 Irrigation Management	Co., New York.	

	2.1.7 Nutrient Management	Nazir, M.S., E.	
Week 4	2.1.8 Insect pest and diseases of wheat crop and their control	Bashir and R. Bantel. (Eds.) 1994. Crop Production. National Book Foundation, Islamabad	
Week 5	3.1 Cotton 3.1.1 Origin, 3.1.2 History, 3.1.3 Morphology, 3.1.4 Adaptation, distribution, economic importance	Martin, J.H., R.P. Waldren and D.L. Stamp. 2006. Principles of Field Crop Production, 4 th Ed., The Macmillan	
Week 6	3.1.5 Agro-technology of Cotton crop 3.1.6 Insect pest and diseases of Cotton crop and their control	Co., New York. Khalil I.A and A. Jan. 2002. Cropping Technology. National BookFoundation, Islamabad. Martin, J.H., R.P. Waldren and D.L. Stamp. 2006. Principles of Field Crop Production, 4 th Ed., The Macmillan	
Week 7	4.1 Maize 4.1.1 Origin, 4.1.2 History, 4.1.3 Morphology, 4.1.4 Adaptation, distribution, economic importance		
Week 8	4.1.5 Agro-technology of Maize crop Nazir, M. Bashir at Bantel. 1994. their control Production National Foundation Islamabace		
Week 9	MID TERM EXAM		
Week 10	5.1 Rice 5.1.1 Origin,	Martin, J.H., R.P. Waldren and D.L.	

Week 11	5.1.2 History, 5.1.3 Morphology, 5.1.4 Adaptation, distribution, economic importance 5.1.5 Agro-technology of Rice crop 5.1.6 Insect pest and diseases of Rice crop and their control	Stamp. 2006. Principles of Field CropProduction, 4 th Ed., The Macmillan Co., New York. Nazir, M.S., E. Bashir and R. Bantel. (Eds.) 1994. Crop Production. National Book	
		Foundation, Islamabad	
Week 12	6.1 Sugarcane 6.1.1 Origin, 6.1.2 History, 6.1.3 Morphology, 6.1.4 Adaptation, distribution, economic importance	Martin, J.H., R.P. Waldren and D.L. Stamp. 2006. Principles of Field Crop Production, 4 th Ed., The Macmillan	
	6.1.5 Agro-technology of Sugarcane crop	Co., New York. Nazir, M.S., E.	
Week 13	6.1.6 Insect pest and diseases of Sugarcane crop and their control	Bashir and R. Bantel. (Eds.) 1994. Crop Production. National Book Foundation, Islamabad	
	7.1 Potato		
Week 14	7.1.1 Origin, 7.1.2 History, 7.1.3 Morphology, 7.1.4 Adaptation, distribution, economic importance	Malik, M.N. 1994. Horticulture. National Book Foundation, Islamabad	
	7.1.5 Agro-technology of Potato crop	ISIAIIIAUAU	
Week 15	7.1.6 Insect pest and diseases of Potato crop and their control		
Week 16	8.1.Management constraints and technological measures to optimize cropproductivity	Khan, S. R. A. 2001. Crop Management in	

	Pakistan with Focus on Soil and Water.	
	Directorate of	
	Agricultural	
	Information,	
	Punjab. Lahore.	
	Khan, S. R. A.	
	2001. Crop	
	Management in	
	Pakistan with Focus	
for crop improvement	on Soil and Water.	
	Directorate of	
	Agricultural	
	Information,	
	Punjab. Lahore.	
FINAL TERM EXAM		
Contents	Assignments/Readings	
1.1 Demonstration of improved sowing methods	Nazir, M.S., E. Bashir and	
	R. Bantel. (Eds.) 1994.	
	Crop Production.National	
	Book Foundation,	
	Islamabad	
	Nazir, M.S., E. Bashir and	
1.2 Demonstration of improved sowing methods	R. Bantel. (Eds.) 1994.	
	Crop Production. National	
	Book Foundation,	
	Islamabad Nazir, M.S., E. Bashir and	
	R. Bantel. (Eds.) 1994.	
2.1 Raising of rice nursery	Crop Production. National	
	Book Foundation,	
	Islamabad	
	Nazir, M.S., E. Bashir and	
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2.2 Transplanting of rice nursery	, ,	
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seed by conventional and		
•	2002. Cropping	
IIIDacion secu		
seed by conventional and	R. Bantel. (Eds.) 1994. Crop Production. National Book Foundation, Islamabad Khalil I.A and A. Jan.	
	seed by conventional and impacton seed	

		Book Foundation,
		Islamabad.
		Nazir, M.S., E. Bashir and
	4.1Techniques of maintaining optimum plant	R. Bantel. (Eds.) 1994.
Week 6	population under field conditions	Crop Production. National
WCCK U	population under field conditions	Book Foundation,
		Islamabad
_		Nazir, M.S., E. Bashir and
	4.2Techniques of maintaining optimum plant	R. Bantel. (Eds.) 1994.
Week 7	population under field conditions	Crop Production. National
VVCCK /	population under field conditions	Book Foundation,
		Islamabad
		Islaniaoad
Week 8	MID TERM EXAM	
		Martin, J.H., R.P.
		Waldren and D.L.
	5.1 Plant characteristics and phenological	Stamp. 2006.
Week 9	development of major crops	Principles of Field
	J	CropProduction, 4 th
		Ed., The Macmillan
		Co., New York.
		Martin, J.H., R.P.
		Waldren and D.L.
	5.1 Plant characteristics and phenological	Stamp. 2006.
Week 10	development of major crops	Principles of Field
	, , , , , , , , , , , , , , , , , , ,	CropProduction, 4 th
		Ed., The Macmillan
		Co., New York.
***	6.1 Introduction to sugar industry	
Week 11	, ,	
XX7 1 12	7.1 Plant mapping for estimating crop yields for	
Week 12	major crops	
XX71.12	7.2 Plant mapping for estimating crop yields for	
Week 13	major crops	
XX71 4.4	8.1Ecosystem analysis (ESA) of different crops	
Week 14		
Week 15	8.2Ecosystem analysis (ESA) of different crops	
Week 16	FINAL TERM EXAM	
	Textbooks and Reading Material	
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Textbooks.

- 1. Khalil I.A and A. Jan. 2002. Cropping Technology. National BookFoundation, Islamabad.
- 2. Khan, S. R. A. 2001. Crop Management in Pakistan with Focus on Soil and Water. Directorate of Agricultural Information, Punjab. Lahore.
- 3. Martin, J.H., R.P. Waldren and D.L. Stamp. 2006. Principles of Field Crop Production, 4th Ed., The Macmillan Co., New York.
- 4. Stoskopf, N.C. 1981. Understanding Crop Production. Reston. Pub. Co.,Inc. Reston, Virginia.
- 5. Malik, M.N. 1994. Horticulture. National Book Foundation, Islamabad
- 6. Nazir, M.S., E. Bashir and R. Bantel. (Eds.) 1994. Crop Production. National Book Foundation, Islamabad

Teaching Learning Strategies

- 1. White board and markers
- 2. Slide projector or multimedia
- 3. Overhead projector
- 4. Photocopy machine or photocopying facilities
- 5. Reference books
- 6. Journals
- 7. Internet (web sited literature)
- 8. Field Tours

Assignments: Types and Number with Calendar

- 1. What are the Agro-physiological factors limiting yield potential of crops? (Mid Term)
- 2. Concepts and components of Good Agricultural Practices (GAP) (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.
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