



**DEPARTMENT OF AGRONOMY**  
**Faculty of Agricultural Sciences**  
**University of the Punjab, Lahore**



**Course Outline**

<b>Programme</b>	B. Sc. (Hons.) Agriculture (Agronomy)	<b>Course Code</b>	<b>AGR-403</b>	<b>Credit Hours</b>	3 (2-1)
<b>Course Title</b>	<b>CONSERVATION AGRONOMY</b>				
<b>Course Introduction</b>					
To develop the soil and water conservation concept and reclaim problem soils for sustaining productivity.					
<b>Learning Outcomes</b>					
After studying this course, the students will be able to:					
<ol style="list-style-type: none"> <li>1. Understand the soil and water conservation</li> <li>2. design strategies to conserve the soil and water</li> <li>3. Learn about reclamation of problem soils and field drainage</li> <li>4. Recognize watershed management and soil fertility improvement</li> <li>5. familiarize with crop residue management on a sustainable basis</li> </ol>					
<b>Course Content (Theory)</b>				<b>Assignments/Readings</b>	
<b>Week 1</b>	1.1 Introduction to soil and water conservation			A Textbook of Agronomy. New Age International Publishers. New Delhi, India.	
<b>Week 2</b>	1.2 Concept of soil and water conservation			Hudson, N.W. 2004. Soil and water conservation in semi-arid areas. Scientific Publishers, India.	
<b>Week 3</b>	1.3 Objectives of soil and water conservation			Hudson, N.W. 2004. Soil and water conservation in semi-arid areas. Scientific Publishers, India.	
<b>Week 4</b>	2.1 Agronomic practices for conservation-tillage			Hudson, N.W. 2004. Soil and water conservation in semi-arid areas.	

		Scientific Publishers, India.
<b>Week 5</b>	2.2 Agronomic practices for conservation-tillage: Terracing	Hudson, N.W. 2004. Soil and water conservation in semi-arid areas. Scientific Publishers, India.
<b>Week 6</b>	2.3 Agronomic practices for conservation-tillage: Benching	Sustainable Crop Production under stress environments. Agro-tech Publishing Academy, Udaipur.
<b>Week 7</b>	2.4 Agronomic practices for conservation-tillage: Deep ploughing	Sustainable Crop Production under stress environments. Agro-tech Publishing Academy, Udaipur.
<b>Week 8</b>	3.1 Species selection	A Textbook of Agronomy. New Age International Publishers. New Delhi, India.
<b>Week 9</b>	<b>MID TERM EXAM</b>	
<b>Week 10</b>	4.1 Crop rotations	Nazir, M.S., E. Bashir and R. Bantel. (Eds.) 1994. Crop Production. National Book Foundation, Islamabad
<b>Week 11</b>	5.1 Cover cropping	Nazir, M.S., E. Bashir and R. Bantel. (Eds.) 1994. Crop Production. National Book Foundation, Islamabad
<b>Week 12</b>	6.1 Strip cropping	Nazir, M.S., E. Bashir and R. Bantel. (Eds.) 1994. Crop Production. National Book Foundation, Islamabad
<b>Week 13</b>	7.1 Farmyard and green manuring for conservation	Nazir, M.S., E. Bashir and R. Bantel. (Eds.)

		1994. Crop Production. National Book Foundation, Islamabad
<b>Week 14</b>	8.1 Stubble and crop-residue management for resource conservation	Nazir, M.S., E. Bashir and R. Bantel. (Eds.) 1994. Crop Production. National Book Foundation, Islamabad
<b>Week 15</b>	9.1 Field drainage	Water Use in Crop Production. Narosa Pub.lishing House Pvt. Ltd. New Dehli, India.
<b>Week 16</b>	9.2 Field drainage	Water Use in Crop Production. Narosa Pub.lishing House Pvt. Ltd. New Dehli, India.
<b>Week 17</b>	10.1 Watershed management under rainfed conditions	Water Use in Crop Production. Narosa Pub.lishing House Pvt. Ltd. New Dehli, India.
<b>Week 18</b>	<b>FINAL TERM EXAM</b>	
<b>Course Contents (Practical)</b>		<b>Assignments/Readings</b>
<b>Week 1</b>	1.1 Visit to different soil conservation centers	
<b>Week 2</b>	1.2 Visit to different water conservation centers	
<b>Week 3</b>	1.3 Visit to different soil and water conservation institutes	
<b>Week 4</b>	2.1 Demonstration of soil conservation structures	
<b>Week 5</b>	3.1 Demonstration of water conservation structures	
<b>Week 6</b>	4.1 Effect of different mulches on soil conservation	Hudson, N.W. 2004. Soil and water conservation in semi-arid areas. Scientific Publishers, India.
<b>Week 7</b>	4.2 Effect of different mulches on water conservation	Hudson, N.W. 2004. Soil and water conservation in semi-arid areas. Scientific Publishers, India.
<b>Week 8</b>	4.3 Effect of different mulches on soil and water conservation	Hudson, N.W. 2004. Soil and water

		conservation in semi-arid areas.Scientific Publishers, India.
<b>Week 9</b>	<b>MID TERM EXAM</b>	
<b>Week 10</b>	5.1 Demonstration of tillage practices for soil conservation	Hudson, N.W. 2004. Soil and water conservation in semi-arid areas.Scientific Publishers, India.
<b>Week 11</b>	5.2 Demonstration of tillage practices for water conservation	Hudson, N.W. 2004. Soil and water conservation in semi-arid areas.Scientific Publishers, India.
<b>Week 12</b>	6.1 Measurement of runoff in soil conservation	Hudson, N.W. 2004. Soil and water conservation in semi-arid areas.Scientific Publishers, India.
<b>Week 13</b>	6.2 Measurement of runoff in water conservation	Hudson, N.W. 2004. Soil and water conservation in semi-arid areas.Scientific Publishers, India.
<b>Week 14</b>	6.3 Measurement of soil erosion in soil conservation	Hudson, N.W. 2004. Soil and water conservation in semi-arid areas.Scientific Publishers, India.
<b>Week 15</b>	6.4 Measurement of soil erosion in water conservation	Hudson, N.W. 2004. Soil and water conservation in semi-arid areas.Scientific Publishers, India.
<b>Week 16</b>	6.5 Combined measurement of runoff and soil erosion	Hudson, N.W. 2004. Soil and water conservation in semi-arid areas.Scientific Publishers, India.
<b>Week 17</b>	Revision of Course	
<b>Week 18</b>	<b>FINAL TERM EXAM</b>	

### Textbooks and Reading Material

Textbooks.

1. Hudson, N.W. 2004. Soil and water conservation in semi-arid areas. Scientific Publishers, India.
2. Kirkham, M.B. (Editor). 2004. Water Use in Crop Production. Narosa Publishing House Pvt. Ltd. New Dehli, India.
3. Maloo, S.R. 2002. Sustainable Crop Production under stress environments. Agro-tech Publishing Academy, Udaipur.
4. Chandrasekaran, B., K. Annadurai and E. Somasundaram. 2010. A Textbook of Agronomy. New Age International Publishers. New Delhi, India.
5. Nazir, M.S., E. Bashir and R. Bantel. (Eds.) 1994. Crop Production. National Book Foundation, Islamabad

### Teaching Learning Strategies

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

### Assignments: Types and Number with Calendar

1. Evaluation of Soil Conservation Techniques (Mid Term)
2. Integrated Watershed Management (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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