UNIVERSITY OF SARGODHA

DEPARTMENT OF AGRONOMY, COLLEGE OF AGRICULTURE

COURSE OUTLINE FALL 2020-2021

Course Title: Basic Agriculture

Course Code: AGRO-5901

Credit Hours: 3(2-1)

Instructor: Dr. Muhammad Ehsan Safdar

Email: mehsan.safdar@uos.edu.pk

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| **DESCRIPTION**  |

This course will provide basic information regarding the Agriculture. Agriculture importance and Agronomic Practices for crop production. Land resources of Pakistan, Irrigation systems of Pakistan, land use and its problems. After the completion of this course students will be equipped with the knowledge of Agriculture and its basics.

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| **LEARNING OUTCOMES** |

1. To provide students the basic information regarding the Agriculture.

2. To describe the importance of Agriculture

3. To make students able to understand the agronomic practices for crop production.

4. To acquaint students with land resources of Pakistan, Irrigation systems of Pakistan, land use and its problems.

5. To equip the students with the knowledge of Agriculture and its basics.

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| **CONTENTS** |

**Theory**

1. Agriculture, history, importance
2. Branches and allied sciences
3. Salient features of Pakistan's agriculture.
4. Climate, land and water resources.
5. Agro-ecological zones of Pakistan.
6. Farming systems.
7. Tillage: objectives and types.
8. Seed: types and quality.
9. Crop nutrients, manures and fertilizers,
10. Sources and methods of application.
11. Irrigation: systems, types and management.
12. Crop protection measures
13. Crop rotation.
14. Harvesting, processing, storage and marketing of farm produce.
15. Agro-based industries.
16. Environmental pollution and health hazards.

**PRACTICAL**

1. Measurement of land
2. Conventional system.
3. Metric system.
4. Identification and use of hand tools and implements.
5. Recording weather data, types of thermometers and their uses,
6. Techniques and instruments for measuring rainfall, light, atmospheric humidity, etc.
7. Identification of various soil types;
8. Determination of soil moisture contents,
9. Saturation percentage,
10. Field capacity
11. Wilting point.
12. Field visits.

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| **READINGS** |

1. Abbas, M. A. 2006. General Agriculture. Emporium Urdu Bazar, Lahore.
2. Balasubramaniyan. 2004. Principles and Practices of Agronomy. Agro bios, Jodhpur, India.
3. Khalil, I.A and A. Jan. 2002. Cropping Technology. National Book Foundation, Islamabad.
4. Khan S.R.A. 2001. Crop Management in Pakistan with Focus on Soil and Water. Directorate of Agricultural Information, Punjab, Lahore.
5. Nazir, M.S., E. Bashir and R. Bantel. (Eds.) 1994. Crop Production. National Book Foundation, Islamabad.
6. Qureshi, M.A. M.A. Zia and M.S. Qureshi. 2006. Pakistan Agriculture Management and Development. A-One Publisher, Urdu Bazar, Lahore.
7. Asif, M. 2013. Crop Production. Publisher: In Tech, under CC BY 3.0 license.
8. Cheema, Z.A. and M. Farooq. 2007. Agriculture in Pakistan. Allied Book Centre, Urdu Bazar, Lahore.
9. S.C.Panada. 2005. Agronomy. AGROBIOS, Jodhpur India.
10. S.S.Singh. Principles and Practices of Agronomy. 2006. Kalyani Publishers India.
11. Soil Science. National Book Foundation, Islamabad.

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| **COURSE SCHEDULE** |
| **Week** | **Topics and Readings** | **Book with Page No.** |
| 1 | Introduction and general discussion about of course contents. Agriculture History. | Book # 1 Page # 2Book # 9 Page # 2-5 |
| 2 | Agriculture, importance, its branches and allied sciences.  | Book # 1 Page # 2-5 |
| 3 | Salient features of Pakistan Agriculture.  | Book # 11 Page # 439-463. |
| 4 | Land resources and their utilization in Pakistan. | Book # 1 Page # 6-8Book # 11 Page # 439-463 |
| 5 | Agro-ecological zone and climate of Pakistan.  | Book # 5 Page # 217-220. |
| 6 | Water resources of Pakistan, surface and ground water.  | Book # 5 Page # 49-51 |
| 7 | Tillage, types and its objectives.  | Book # 9 Page # 140-144.Book # 5 Page # 147-166. |
| 8 | Farming systems and its types.  | Book # 5 Page # 211-214. |
| **9** | **Mid Term Exam (December 14-18, 2020)** |
| 10 | Seed- definition, types and characteristics of quality seed.  | Book # 10 Page # 2-4, Book # 5 Page # 100, 110. |
| 11 | Crop nutrition, manures and fertilizers; Classification of fertilizer, and their composition.  | Book # 3 Page # 112-124, Book # 10 Page # 112-119. |
| 12 | Sources of fertilizer, method of Application.  | Book # 3, Page # 112-124, Book # 10 Page # 112-119 |
| 13 | Irrigation methods, types and management.  | Book # 5 Page # 70-77, Book # 10 Page # 211-215 |
| 14 | Crop Rotation-Principle and types.  | Book # 5 Page # 206-211, Book # 10 Page # 142-150. |
| 15 | Crop protection measures- Direct, indirect control measure Material will be provided. | - |
| 16 | Harvesting and storage and processing of farm produce.  | Book # 5 Page # 133-138, Book # 2 Page # 432-461. |
| 17 | Agro-based industry, Environmental pollution and health hazard.  | Book # 11 Page # 397-399 |
| **18** | **Final Exam (February 8-12, 2020)** |

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| **RESEARCH PROJECT / PRACTICAL / LABS** |

**Exercise # 1:** Measurement of land in terms of Conventional system and Metric system.

**Exercise # 2:** Identification and use of hand tools and implements.

**Exercise # 3:** Recording weather data, types of thermometers and their uses

**Exercise # 4:** Techniques and instruments for measuring rainfall, light, atmospheric humidity, etc.

**Exercise # 5:** Identification of various soil types

**Exercise # 6:** Determination of soil moisture contents, Saturation percentage, Field capacity, Wilting point.

**Exercise # 7:** Field visits.

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| **ASSIGNMENT CRITERIA** |

Sessional: 02

Project: 02

Presentation: 02

Participation: 02

Mid-term: 12

Final-Exam: 20

Practical: 20