UNIVERSITY OF SARGODHA

Institute of Food Science & Nutrition

COURSE OUTLINE Fall 2020-21

Course Title: Basic Agriculture

Course Code: AGRO-5901

Credit Hours: 3(2-1)

Instructor: Dr. Amjed Ali

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| **DESCRIPTION** |

* This course will provide basic information regarding the Agriculture, food resources, Agro-ecological zones of Pakistan and important food crops grown in those areas. Students will be introduced about the impact of different weather elements on crops, Land resources of Pakistan, Harvesting, processing, storage and marketing of farm produce. Agro-based industries. Environmental pollution and health hazards

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| **LEARNING OUTCOMES** |

The key objectives of the course are:

* Thorough understanding of the basics of agriculture, sufficient knowledge of weather elements regarding crop growing conditions.
* Substantial understanding of the land resources of Pakistan.
* Appreciation of the social and ethical issues related to Pakistan’ Agriculture.
* Introduction about harvesting, processing, storage and marketing of farm produce as well as Agro-based industries

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| **CONTENTS** |

* Agriculture history, importance, branches and allied sciences.
* Salient features of Pakistan's agriculture. Climate, land and water resources.
* Agro ecological zones of Pakistan. Farming systems. Classification of field crop plants.
* Tillage: objectives and types.
* Seed: types and quality. Crop nutrients, manures and fertilizers, sources and methods of application.
* Irrigation: systems, types and management.
* Crop protection measures. Crop rotation.
* Harvesting, processing, storage and marketing of farm produce.
* Agro-based industries.Environmental pollution and health hazards.

**Practical**

* Land measuring units.
* Demonstration of hand tools and tillage implements.
* Identification of meteorological instruments.
* Identification of crop plants, weeds and seeds.
* Identification of organic and inorganic fertilizers.
* Calculation of nutrient-cum-fertilizer unit value.
* Demonstration of various irrigation methods.
* Field visits.

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| **READINGS** |

* Abbas, M. A. 2006. General Agriculture. Emporium Urdu Bazar, Lahore.
* Balasubramaniyan. 2004. Principles and Practices of Agronomy. Agro bios, Jodhpur, India.
* Khalil, I.A and A. Jan. 2002. Cropping Technology. National Book Foundation, Islamabad.
* Khan S.R.A. 2001. Crop Management in Pakistan with Focus on Soil and Water. Directorate of Agricultural Information, Punjab, Lahore.
* Nazir, M.S., E. Bashir and R. Bantel. (Eds.) 1994. Crop Production. National Book Foundation, Islamabad.

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| **COURSE** | | |
| **Week** | **Topics and Readings** | **Book with Page No.** |
| 1 | Introduction (Course contents) | ------------------------------------------------- |
| Agriculture history | Principles of Agronomy, Pages 5-10 |
| 2 | Importance of Agriculture | A Textbook of Agronomy, Pages, 4-6 |
| Importance of Agriculture | A Textbook of Agronomy, Pages, 4-6 |
| 3 | Branches of Agriculture | Cropping Technology, Pages, 3-4 |
| Sciences allied to Agriculture | A Textbook of Agronomy, Pages, 2-4, Cropping Technology, Pages, 4-9 |
| 4 | Salient features of Pakistan's agriculture | Crop Management in Pakistan. Page, 1-5 |
| Salient features of Pakistan's agriculture | Crop Management in Pakistan. Page, 1-5 |
| 5 | land and water resources | Agriculture in Pakistan, Pages, 117-130. |
| Climate and weather elements | Agriculture in Pakistan, Pages, 117-130. |
| 6 | Agro ecological zones of Pakistan | Agriculture in Pakistan, Pages,109-112 |
| Agro ecological zones of Pakistan | Agriculture in Pakistan, Pages,113-116 |
| 7 | Farming systems & classification of field crops | Crop Production, Pages, 206-213 |
| Farming systems & classification of field crops | Crop Production, Pages, 206-213 |
| 8 | Tillage: objectives | Principles of Agronomy, Pages 190-199 |
| Types of tillage | --------------------------------------------------- |
|  | **MID TERM EXAM** |  |
| 9 | Seed: types & quality | Crop Production, Pages, 99-136 |
| Crop nutrients, Manures | Principles of Agronomy, Pages, 284-345 |
| 10 | Fertilizers and Methods of its application | ---------------------------------------------------- |
| Irrigation: Systems, Types and Management | Principles of Agronomy, Pages, 346-473 |
| 11 | Crop Protection Measures | Principles of Agronomy, Pages, 658-662 |
| Crop rotation | Cropping Technology, Pages, 112-119 |
| 12 | Harvesting &Processing | Principles and practices of Agronomy, Pages432-440 |
| Storage of farm produce | Principles and practices of Agronomy, Pages432-459 |
| 13 | Marketing of farm Produce | <https://en.wikipedia.org/wiki/Agricultural_marketing> |
| Marketing of farm Produce | --------------------------- |
| 14 | Agro-based industries | [http://notesforpakistan.blogspot.com](http://notesforpakistan.blogspot.com/) |
| Agro-based industries | ---------------------------------- |
| 15 | Environmental pollution | <https://en.wikipedia.org/wiki/Pollution> |
| Environmental pollution | ------------------------------- |
| 16 | Health Hazards | ----------------------------------------------- |
| Health Hazard | ------------------------------------------------------ |
| 17 | Final Exam |  |

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| **RESEARCH PROJECT / PRACTICAL / LABS** | | | |
| **Week** | **Contents** | **Book with Page No.** |
| 1 | Land measuring units | Fertilizer Guide Book by FFC Pages 77-78 |
| 2 | Land measuring units | -------------------------- |
| 3 | Demonstration of hand tools and tillage implements | Crop Production 147-174 |
| 4 | Demonstration of hand tools and tillage implements | ---------------------------------- |
| 5 | Identification of meteorological instruments | In the field |
| 6 | Identification of meteorological instruments | In the field |
| 7 | Identification of crop plants, weeds and seeds | Visit of cultivated area |
| 8 | Identification of crop plants, weeds and seeds | ------------------------- |
| 9 | Identification of organic and inorganic fertilizers | In the Lab |
| 10 | Identification of organic and inorganic fertilizers | ------------- |
| 11 | Calculation of nutrient-cum-fertilizer unit value | Numerical |
| 12 | Calculation of nutrient-cum-fertilizer unit value | -------------- |
| 13 | Demonstration of various irrigation methods | Crop Production, Pages30-49 |
| 14 | Demonstration of various irrigation methods | --------------- |
| 15 | Field Visit | COA, Research Area |
| 16 | Field Visit | COA, Research Area |
| 17 | **Practical Exam** | --------------- |
| **ASSIGNMENT CRITERIA** | | | |

**Sessional,** **include assignments, presentation, class participation & attendance:** **20**

**Mid Term: 30**

**Final including Practical: 50**