

# UNIVERSITY OF SARGODHA

## AGRICULTURE DEPARTMENT

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### COURSE OUTLINE

Spring Semester: 2020

Course Title: Stored Products Pests and Their Management  
Course Code: ENT-308  
Credit Hours: 3(2-1)  
Instructor: Dr. Abubakar Muhammad Raza  
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### DESCRIPTION AND OBJECTIVES

Stored grain insect pests play a pivotal role in causing qualitative and quantitative losses to grain at post harvest storage condition. Different stored products like cereals, pulses, oilseeds, nuts, dried fruits, spices etc. get heavy damage if unchecked under the storage conditions. Stored grain insect pests like lesser grain borer, rice weevil, seed beetle, dermestid beetle, red flour beetle, grain moth etc not only cause heavy loss to grains but also deteriorate the market value of the produce. Correct identification, mode of damage and information about the biology and ecology of different stored grain insect pests is very important for devising an effective pest control strategy.

### INTENDED LEARNING OUTCOMES

The basic aim of the course is to provide a practical knowledge and information to the students on the identification, economic importance, pest status, distribution, life history, ecological requirements and finally management of stored product insect pests.

### COURSE CONTENTS

1. Introduction to Stored Products Pests
2. Stored product losses
3. Identification and Biology of different stored products pests
4. Control of different stored products pests
5. Storage principles
6. Types of storages
7. Factors affecting grain and other products in storages

### READINGS

#### Recommended books

1. Hill, D.S. 2002. Pests of Stored Food Stuffs and Their Control, Springer Publisher.
2. Rees, D. 2009. Insects of Stored Products. Manson Publishing Company.
3. Zaklandvoi, G. A. and Ratanova. V. F. 1987. Stored Grain Pests and their control. Oxonian Press Pvt. Ltd., London.

## COURSE SCHEDULE

Weeks	Topics and Readings	Reference Books
1.	Introduction to Stored Products Pests	Rees, D. 2009. Insects of Stored Products. Manson Publishing Company.
2.	Importance of Stored Products pests	Zaklandvoi, G.A. and V.F. Ratanova. 1987. Stored Grain Pests and their Control. Oxonian Press Pvt. Ltd., London
3.	Stored product losses	Rees, D. 2009. Insects of Stored Products. Manson Publishing Company.
4.	Identification of different stored products pests	Rees, D. 2009. Insects of Stored Products. Manson Publishing Company.
5.	Identification of different stored products pests	Rees, D. 2009. Insects of Stored Products. Manson Publishing Company.
6.	Biology and ecology of different stored products pests	Rees, D. 2009. Insects of Stored Products. Manson Publishing Company.
7.	Control of different stored products pests	Ashfaq, M., M.A. Saleem and F. Ahmad 2000. Zari Agnas ki Mahfooz Zakhira Kari (in Urdu). Pak Book Empire, Lahore
8.	<b>Revision and Mid exams/Term paper</b>	
9.	Sampling and monitoring of Stored grain insects	Wilbur, D.A. and R.B. Mills and J.R Pedersen. 1977. Manual of Grain and Cereal Product Insects and their Control. Kansas State University, U.S.A
10.	Types of storages	Zaklandvoi, G.A. and V.F. Ratanova. 1987. Stored Grain Pests and their Control. Oxonian Press Pvt. Ltd., London
11.	Storage principles	Rees, D. 2009. Insects of Stored Products. Manson Publishing Company.
12.	Factors affecting other products in storages	Rees, D. 2009. Insects of Stored Products. Manson Publishing Company.
13.	Prevention of Stored product from losses	Wilbur, D.A. and R.B. Mills and J.R Pedersen. 1977. Manual of Grain and Cereal Product Insects and their Control. Kansas State University, U.S.A
14.	Prevention of Stored product from losses	Wilbur, D.A. and R.B. Mills and J.R Pedersen. 1977. Manual of Grain and Cereal Product Insects

		and their Control. Kansas State University, U.S.A
15.	Control of different stored products pests	Rees, D. 2009. Insects of Stored Products. Manson Publishing Company.
16.	<b>Final Exam</b>	

### RESEARCH PROJECT /PRACTICALS/LABS/ASSIGNMENTS

Assignment= Collection of different stored grain insect pests and their damage

### ASSESSMENT CRITERIA

Theory Final Exams Marks	20
Mid Exams/ Term paper Marks	12
Practical Exams Marks	20
Sessional Marks	08