

**Department of Entomology
Faculty of Agricultural Sciences
University of the Punjab, Lahore
Course Outline**



Programme	B.Sc. (Hons) Agriculture (Major: Entomology)	Course Code	ENT-309	Credit Hours	3 (2-1)
Course Title	Insect Behavior (Theory)				
Course Introduction					
The course is designed to give insights regarding basic concept of insect behavior and its importance in pest management					
Learning Outcomes					
The students will acquire good knowledge of basic concepts of insect behaviour.					
Course Content				Assignments/Readings	
Week 1	Unit-I 1.1 Introduction			Matthews, R. W. and Matthews J. R. 2010. Insect Behavior. 2nd Edition. Springer Dordrecht Heidelberg London New York.	
Week 2	Unit-I 1.2 Types of insect behaviour			Matthews, R. W. and Matthews J. R. 2010. Insect Behavior. 2nd Edition. Springer Dordrecht Heidelberg London New York.	
Week 3	Unit-I 1.3 Insect reflexes			Romser, W.S. and Stoffolano, J. G. 1998. The Science of Entomology. 4th Edition, WCB McGraw-Hill.	
Week 4	Unit-I 1.4 orientation (kinesis and taxes)			Romser, W.S. and Stoffolano, J. G. 1998. The Science of	

		Entomology. 4th Edition, WCB McGraw-Hill.
Week 5	Unit-I 1.5 learning behavior	Romser, W.S. and Stoffolano, J. G. 1998. The Science of Entomology. 4th Edition, WCB McGraw-Hill.
Week 6	Unit-I 1.6 periodicity	Matthews, R. W. and Matthews J. R. 2010. Insect Behavior. 2nd Edition. Springer Dordrecht Heidelberg London New York.
Week 7	Unit-I 1.7 patterns of behaviour 1.8 communications	Matthews, R. W. and Matthews J. R. 2010. Insect Behavior. 2nd Edition. Springer Dordrecht Heidelberg London New York.
Week 8	Mid-Term Exam	
Week 9	Unit-II 2.1 visual; auditory; tactile; chemical communications	Matthews, R. W. and Matthews J. R. 2010. Insect Behavior. 2nd Edition. Springer Dordrecht Heidelberg London New York.
Week 10	Unit-II 2.2 territoriality	Romser, W.S. and Stoffolano, J. G. 1998. The Science of Entomology. 4th Edition, WCB
Week 11	Unit-II 2.3 nervous, endocrine, genetic and biological functions of behaviour	Romser, W.S. and Stoffolano, J. G. 1998. The Science of Entomology. 4th Edition, WCB
Week 12	Unit-II 2.4 host finding	Romser, W.S. and Stoffolano, J. G. 1998. The Science of Entomology. 4th Edition, WCB

Week 13	Unit-II 2.5 feeding and reproductive behaviour	Romser, W.S. and Stoffolano, J. G. 1998. The Science of Entomology. 4th Edition, WCB
Week 14	Unit-II 2.6 escape, defence, offence and predation	Matthews, R. W. and Matthews J. R. 2010. Insect Behavior. 2nd Edition. Springer Dordrecht Heidelberg London New York.
Week 15	Unit-II 2.7 dispersal and migration 2.8 dormancy	Matthews, R. W. and Matthews J. R. 2010. Insect Behavior. 2nd Edition. Springer Dordrecht Heidelberg London New York.
Week 16	Final-Term Exam	

Textbooks and Reading Material

1. Febre, J.H. 1993. Insect Behaviour. Discovery Publishing House.
2. Fellows, N. and Holloway, G. 2005. Insect Evolutionary Behaviour. CABI
3. Goulson, D. 2003. Bumble Bees: Behaviour and Ecology. Oxford University Press.
4. Harbone, J.A. 1998. Introduction to Ecological Biochemistry. Academic Press. London.
5. Matthews, R. W. and Matthews J. R. 2010. Insect Behavior. 2nd Edition. Springer Dordrecht Heidelberg London New York.
6. Parihar, R. 2001. Reproductive Behaviour and Biology of Sex. Dominant Publishers and Distributors, Delhi.
7. Prakash, M. 2008. Encyclopedia of Entomology II: Insect Behaviour. Discovery Publishing House, PVT. LTD. Darya Ganj, New Delhi.
8. Romser, W.S. and Stoffolano, J. G. 1998. The Science of Entomology. 4th Edition, WCB McGraw-Hill.
9. Vijay, K. 2008. Insect Behaviour. Vista International Publication House.

Teaching Learning Strategies

Lectures, discussions, presentations, quiz and assignments

Assignments: Types and Number with Calendar			
1. How insect behavior can be helpful in pest management (Mid-term)			
2. Genetics of insect behavior (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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Course Title	Insect behavior (Practical)				
Course Introduction					
The course is designed to give insights regarding basic concept of insect behavior and its importance in pest management					
Learning Outcomes					
The students will acquire good knowledge of basic concepts of insect behaviour.					
Course Content				Assignments/Readings	

Week 1	Unit-I 1.1 Communication methods	
Week 2	Unit-I 1.2 Insect rearing to study chemical communication	
Week 3	Unit-I 1.2 Insect rearing to study chemical communication	
Week 4	Unit-I 1.2 Insect rearing to study chemical communication	
Week 5	Unit-I 1.3 Insect rearing to study mating behavior	
Week 6	Unit-I 1.3 Insect rearing to study mating behavior	
Week 7	Unit-I 1.1 Insect rearing to study mating behavior 1.2 1.3 Insect rearing to study mating behavior	
Week 8	Mid-Term Exam	

Week 9	Unit-II 2.1 Insect rearing to host finding behavior	
Week 10	Unit-II 2.1 Insect rearing to host finding behavior	
Week 11	Unit-II 2.1 Insect rearing to host finding behavior	
Week 12	Unit-II 2.1 Insect rearing to host finding behavior	
Week 13	Unit-II 2.2 Insect rearing to auditory and social behavior	
Week 14	Unit-II 2.2 Insect rearing to auditory and social behavior	
Week 15	Unit-II 2.2 Insect rearing to auditory and social behavior	
Week 16	Final-Term Exam	

Textbooks and Reading Material

10. Febre, J.H. 1993. Insect Behaviour. Discovery Publishing House.
11. Fellows, N. and Holloway, G. 2005. Insect Evolutionary Behaviour. CABI
12. Goulson, D. 2003. Bumble Bees: Behaviour and Ecology. Oxford University Press.
13. Harbone, J.A. 1998. Introduction to Ecological Biochemistry. Academic Press. London.

14. Matthews, R. W. and Matthews J. R. 2010. Insect Behavior. 2nd Edition. Springer Dordrecht Heidelberg London New York.
15. Parihar, R. 2001. Reproductive Behaviour and Biology of Sex. Dominant Publishers and Distributors, Delhi.
16. Prakash, M. 2008. Encyclopedia of Entomology II: Insect Behaviour. Discovery Publishing House, PVT. LTD. Darya Ganj, New Delhi.
17. Romser, W.S. and Stoffolano, J. G. 1998. The Science of Entomology. 4th Edition, WCB McGraw-Hill.
18. Vijay, K. 2008. Insect Behaviour. Vista International Publication House.

Teaching Learning Strategies

Lectures, discussions, presentations, quiz and assignments

Assignments: Types and Number with Calendar

3. How insect behavior can be helpful in pest management (Mid-term)
4. Genetics of insect behavior (Final-term)

Assessment

Sr. No.	Elements	Weightage	Details
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