

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



Programme	B.Sc. (Hons) Agriculture (Major: Entomology)	Course Code	ENT-307	Credit Hours	3 (2-1)
Course Title	INSECT PESTS OF HOUSEHOLD, MAN AND ANIMALS (Theory)				
Course Introduction					
The course is designed to give insights regarding identification and management of urban insect pests					
Learning Outcomes					
The student should be able to identify, collect and management of different insects of household, man and animals.					
Course Content			Assignments/Readings		
Week 1	Unit-I 1.1 Introduction		Service, M. 2012. Medical Entomology for students Cambridge University Press 303 pp.		
	Unit-I 1.2 Economic importance of urban pests				
Week 2	Unit-I 1.3 identification, biology and control of ants and wasps		Aldridge, B. 2004. Medical Entomology. Text book of Public Health and Veterinary Sciences. Chapman and Hall, London.		
Week 3	Unit-I 1.4 identification, biology and control of termites		Aldridge, B. 2004. Medical Entomology. Text book of Public Health and Veterinary Sciences. Chapman and Hall, London.		

Week 4	Unit-I 1.5 identification, biology and control of cockroaches	Aldridge, B. 2004. Medical Entomology. Text book of Public Health and Veterinary Sciences. Chapman and Hall, London.
Week 5	Unit-I 1.6 identification, biology and control of silverfish	Aldridge, B. 2004. Medical Entomology. Text book of Public Health and Veterinary Sciences. Chapman and Hall, London.
Week 6	Unit-I 1.7 identification, biology and control of cricket	Aldridge, B. 2004. Medical Entomology. Text book of Public Health and Veterinary Sciences. Chapman and Hall, London.
Week 7	Unit-I 1.8 identification, biology and control of powder-post beetle 1.9 identification, biology and control of carpet beetle	Service, M. 2012. Medical Entomology for students Cambridge University Press 303 pp.
Week 8	Mid-Term Exam	
Week 9	Unit-II 2.1 identification, biology and control of cloth moths	Service, M. 2012. Medical Entomology for students Cambridge University Press 303 pp.
Week 10	Unit-II 2.2 identification, biology and control of psocids	Service, M. 2012. Medical Entomology for students Cambridge University Press 303 pp.
Week 11	Unit-II 2.3 identification, biology and control of lice	Kitching, I. Forey, P.L. and Humphries, C.J.1998. Cladistics: Theory and Practice of Parsimony Analysis, Oxford University, Press, UK.
Week 12	Unit-II	Gold, R. E. and John, S. C. 2010, Hand book of Household & Structural

	2.4 identification, biology and control of bedbugs	Insect pest published by Entomological Society of America 160 pp
Week 13	Unit-II 2.5 identification, biology and control of fleas	Gold, R. E. and John, S. C. 2010, Hand book of Household & Structural Insect pest published by Entomological Society of America 160 pp
Week 14	Unit-II 2.6 identification, biology and control of different types of flies	Gold, R. E. and John, S. C. 2010, Hand book of Household & Structural Insect pest published by Entomological Society of America 160 pp
Week 15	Unit-II 2.7 identification, biology and control of mosquitoes 2.8 identification, biology and control of midges and sand flies	Gold, R. E. and John, S. C. 2010, Hand book of Household & Structural Insect pest published by Entomological Society of America 160 pp University Press.
Week 16	Final-Term Exam	
Textbooks and Reading Material		
<ol style="list-style-type: none"> 1. Agarwal, S. 2009. Insect Pests of Cereals and their Management. Oxford Book Co. India. 2. Aldridge, B. 2004. Medical Entomology. Text book of Public Health and Veterinary Sciences. Chapman and Hall, London. 3. Atwal, A.S. and Dhaliwal, 2005. Agricultural Pests of Southeast Asia and their Management. Kalyani Publishers, Ludhiana. 4. Bishop, F. C. 1916. Fleas as Pests to Man and Animals, with Suggestions for Their Control. Harvard Uni Press, USA 5. Edmen, H. F. 2013, Handbook of Agricultural Entomology published by John Wiley & Sons 312 pp. 6. Fernald, H.T. 2008. Applied Entomology, An Introductory Textbook of Insects in their Relation to Man. Kessinger Publishing (Amazon). 7. Gold, R. E. and John, S. C. 2010, Hand book of Household & Structural Insect pest published by Entomological Society of America 160 pp 		

8. James, M.T. and Harwood, R.F. 1969. Herm's Medical Entomology. The Macmillan Company Canada.
9. Jarau, S. and Hrucir, M. 2009, Food exploitation by social insects CRC press 360 pages.
10. Lohar, M.K. 2013. General Entomology. 2nd edition, Department of Entomology. Sindh Agriculture University Tandojam Sindh, Pakistan. Pakistan.
11. Metcalf C.L. 1984. Destructive and Useful Insects. Their Habits and Control 4th Ed. McGraw-Hill Book Co. Inc. N.Y.
12. Pfadt. R. E. 1985 Fundamental of Applied Entomology. 4th Ed. The McMillan Co., N.Y.
13. Service, M. 2012. Medical Entomology for students Cambridge University Press 303 pp.

Teaching Learning Strategies

Lectures, discussions, presentations, quiz and assignments

Assignments: Types and Number with Calendar

1. Insect-borne human diseases (Mid-term)
2. Impact of insect borne-diseases on poultry and dairy industries (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.

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



Programme	B.Sc. (Hons) Agriculture (Major: Entomology)	Course Code	ENT- 307	Credit Hours	3 (2-1)
Course Title	Insect pests of household, man and animals (Practical)				
Course Introduction					
The course is designed to give insights regarding identification and management of urban insect pests					
Learning Outcomes					
The student should be able to identify, collect and management of different insects of household, man and animals.					
Course Content				Assignments/Readings	
Week 1	Unit-I				
	1.1 Disease symptoms of insect bites				
	Unit-I				
	1.2 Insect collection and identification techniques				
Week 2	Unit-I				
	1.3 identification, biology and control of ants and wasps				
Week 3	Unit-I				
	1.4 identification, biology and control of termites				
Week 4	Unit-I				
	1.5 identification, biology and control of cockroaches				

Week 5	Unit-I 1.6 identification, biology and control of silverfish	
Week 6	Unit-I 1.7 identification, biology and control of cricket	
Week 7	Unit-I 1.8 identification, biology and control of powder-post beetle 1.9 identification, biology and control of carpet beetle	
Week 8	Mid-Term Exam	
Week 9	Unit-II 2.1 identification, biology and control of cloth moths	
Week 10	Unit-II 2.2 identification, biology and control of psocids	
Week 11	Unit-II 2.3 identification, biology and control of lice	
Week 12	Unit-II 2.4 identification, biology and control of bedbugs	
Week 13	Unit-II 2.5 identification, biology and control of fleas	
Week 14	Unit-II 2.6 identification, biology and control of different types of flies	
Week 15	Unit-II 2.7 identification, biology and control of mosquitoes	

	2.8 identification, biology and control of midges and sand flies	
Week 16	Final-Term Exam	
Textbooks and Reading Material		
<p>14. Agarwal, S. 2009. Insect Pests of Cereals and their Management. Oxford Book Co. India.</p> <p>15. Aldridge, B. 2004. Medical Entomology. Text book of Public Health and Veterinary Sciences. Chapman and Hall, London.</p> <p>16. Atwal, A.S. and Dhaliwal, 2005. Agricultural Pests of Southeast Asia and their Management. Kalyani Publishers, Ludhiana.</p> <p>17. Bishop, F. C. 1916. Fleas as Pests to Man and Animals, with Suggestions for Their Control. Harvard Uni Press, USA</p> <p>18. Edmen, H. F. 2013, Handbook of Agricultural Entomology published by John Wiley & Sons 312 pp.</p> <p>19. Fernald, H.T. 2008. Applied Entomology, An Introductory Textbook of Insects in their Relation to Man. Kessinger Publishing (Amazon).</p> <p>20. Gold, R. E. and John, S. C. 2010, Hand book of Household & Structural Insect pest published by Entomological Society of America 160 pp</p> <p>21. James, M.T. and Harwood, R.F. 1969. Herm's Medical Entomology. The Macmillan Company Canada.</p> <p>22. Jarau, S. and Hrucir, M. 2009, Food exploitation by social insects CRC press 360 pages.</p> <p>23. Lohar, M.K. 2013. General Entomology. 2nd edition, Department of Entomology. Sindh Agriculture University Tandojam Sindh, Pakistan. Pakistan.</p> <p>24. Metcalf C.L. 1984. Destructive and Useful Insects. Their Habits and Control 4th Ed. McGraw-Hill Book Co. Inc. N.Y.</p> <p>25. Pfadt. R. E. 1985 Fundamental of Applied Entomology. 4th Ed. The McMillan Co., N.Y.</p> <p>26. Service, M. 2012. Medical Entomology for students Cambridge University Press 303 pp.</p>		
Teaching Learning Strategies		
Lectures, discussions, presentations, quiz and assignments		

Assignments: Types and Number with Calendar			
3. Insect-borne human diseases (Mid-term)			
4. Impact of insect borne-diseases on poultry and dairy industries (Final-term)			
Assessment			

Sr. No.	Elements	Weightage	Details
4.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
5.	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.
6.	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.