

# Govt. Bilasa Girls PG College, Bilaspur

## Generic Elective Course

### Zoology :- Vector Disease and Control

PART -A - INTRODUCTION			
Program : Certificate		Class- B.Sc. Semester I	Year 2022
Session: 2022-23			
SUBJECT : ZOOLOGY			
1.	Course Code	BZOOLGT101	
2.	Course Title	Vector disease and control	
3.	Course type	Generic Elective Course	
4.	Pre-requisite if any	As per institutional guidelines	
5.	Course Learning Outcomes (CLO)	After successfully completing this course, the students will be able to: <ul style="list-style-type: none"> <li>• Develop awareness about the causative agents and control measures of many commonly occurring diseases.</li> <li>• Develop understanding about the favourable breeding conditions for the vectors.</li> <li>• Devise strategies to manage the vectors population below threshold levels, public health importance.</li> <li>• Undertake measures or start awareness programs for maintenance of hygienic conditions, avoidance of contact from vector, destruction of breeding spots in the vicinity of houses and cattle shed by public health education campaign.</li> </ul>	
6.	Credit Value	4	
7.	Marks		

### PART -B - CONTENT OF THE COURSE

Total Number of Lectures in Hours/Periods = 40/60		
UNIT	TOPICS	No. Of Hours/ Periods
UNIT - I	<b>Vector and vector bionomics</b> Brief introduction, types and morphological peculiarities of vectors such as mosquitoes, flies, fleas, lice, bugs, ticks and mites. Host-vector relationship. Primary and secondary vector concept. Vectorial capacity. Vector bionomics-larval habitats and host biting preferences, Human practices and the occurrence of pests	10/15
UNIT - II	<b>Disease vectors and the causes of disease outbreaks</b> Salient features of the vectors belonging to Diptera, Siphonaptera, Siphunculata, Hemiptera, Arachnida, Blattaria, Acarina (families Ixodidae and Argasidae) etc. Role of non-blood sucking flies in myiasis; of blood sucking flies in transmission of plague and typhus; of lice (body, head, pubic) in transmission of typhus, relapsing and trench fevers, Vagabond's disease and Phthiriasis; of bugs in transmission of Chaga's disease of. Brief account of mites and the associated diseases. How do people cause outbreak?	10/15
UNIT - III	<b>Vector management strategies</b> Control of vector flies by screening, fly traps, electrocution, poison baits and outdoor	

2- *Rashmi*  
 3- *A. Tiwari*  
 5- *Rashmi Patel*  
 6- *(out Tripathi)*  
 12 *Rashmi*  
 (Dr Rashmi Sao)

	residual sprays; biological control by natural parasites and predators. Chemical control. Efficacy of synthetic pyrethroids, residual spray of insecticides, treated bed nets/curtains and fumigations. Biological control of mosquitoes by the use of viruses, bacteria, fungi, parasites, nematodes and larvivorous fishes. Sterile insect technique, Eradication, Other genetic approaches, Pheromones/allelochemicals, Attract-and-kill, Mating disruptors, alarm pheromones and oviposition disruptors	10/15
UNIT - IV	<b>Emerging concepts and approaches to vector management</b> Legislation and regulation, Methods of sampling and monitoring, sampling plan, Allocation of sampling units. Exclusion and routes of entry. Controlled atmosphere, Risk assessment, The integrated control/ IPM approach, Damage thresholds estimation, Forecasting, Increasing agroecosystem resistance, Pesticide selection, Eradication versus control, Up to what limits IPM should be adopted. Decision support	10/15

### PART -C - LEARNING RESOURCE

#### Suggested Readings

1. Imms, A.D. (1977). A General Text Book of Entomology. Chapman & Hall, UK.
2. Chapman, R.F. (1998). The Insects: Structure and Function.IV Edition, Cambridge University Press, UK.
3. Mathews, G. (2011). Integrated Vector Management: Controlling Vectors of Malaria and other Insect Vector borne Disease. Wiley-Blackwell.  
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4. Belding, D.L. (1942). Textbook of Clinical Parasitology. Appleton-Century Co., Inc., New York.
5. Roy, D.N. and Brown, A.W.A. (2004). Entomology. Biotech Books, Delhi

#### Part D: Assessment and Evaluation

##### Suggested Continuous Evaluation Methods:

Maximum Marks:- 75

Continuous Comprehensive Evaluation (CCE): 20Marks

Term end semester exam: 80 Marks

<b>Internal Assessment:</b> Continuous Comprehensive Evaluation (CCE)	Class Test Assignment/Presentation 20 (best of Two internal test) / 20 Assignment	20 Total Marks (Average of Test & Assignment) :
External Assessment: Term end semester exam Time: 3 Hours	Section (A): eight (08) Short Questions Section (B): 04 Short Questions Section (C): four Long Questions	16 16 48
		<b>Total Marks: 100</b>

1- Rashmi  
2- Mahalia  
3- Anu

4-  
5-  
6-