



Certificate Program In Animal Handling and Experimental Techniques

(To be launched from Jan 2023)

Course Curriculum Structure



DEPARTMENT OF PHARMACEUTICAL SCIENCES

GIRIJANANDA CHOWDHURY UNIVERSITY

Hathkhowapara, Azara, Guwahati-781017, Assam



Semester I

Course Code	Course Name	Hours per week			No. of Credits	Evaluation criteria *		
		L	T	P		C	Continuous Evaluation (50)	End term (50)
AHE T	Animal Handling and Experimental Techniques	2	-	6	8	50	50	100
Total		2	-	6	8	50	50	100

L: Lecture, T: Tutorial, P: Practical, C: Credit

**Evaluation process can be flexible as per the course demands.*

Details of Syllabus (If Any)

Unit	Topics	General component	No. of classes	No. of hours
I	Introduction to Animal Laboratory	General introduction to laboratory animals. Introduction to animal Laboratory- Layout of an animal house. Demonstration of the animal house facility. Demonstration of the IVC management	Theory-1 class	1 hour
II	Different types of laboratory animals	Classification of laboratory animals. Importance of communicating with the laboratory animals. Normal and abnormal behavior of the laboratory animals. Methods of safe handling of small animals	Theory-1 class	1 hour
II	Laboratory Animal Breeding	Breeding techniques of different species of laboratory animals. Inbreeding and outbreeding. Breeding and management of transgenic, and other genetically modified animal models.	Theory-1 class	1 hour
III	Basic experimental techniques	Animal handling and restraining. Routes of drug administration. Sampling techniques. Necropsy procedures and euthanasia	Theory 1 class	1 hour



IV	Animal	Basic requirement of lab	Theory	
	Nutrition and	nutritional animals.	1 class	1 hour
V	Pathology of the common diseases of lab animals	Health monitoring program and methodologies. Basic techniques for detection of bacterial and viral diseases in laboratory rodents. Therapeutic and preventive measures. Methods of monitoring bacterial load in floor, feed, water and bedding.	Theory 1 class	1 hour

		Practice of sanitation and hygiene.		
VI	Anaesthesia	Types of anaesthesia. Drugs used for anaesthesia in surgical operations. List of anaesthetic drugs- dose and its calculation.	Theory- 1	1 hour
VII	Record keeping and Documentation	Record keeping and documentation of animal breeding, receipt, distribution of animals, feed and bedding, disposal etc. Guidelines and regulations related to use of animals in research and testing, writing and designing animal experimental protocol, roles and responsibility of the IAEC and CPCSEA.	Theory -1 class	1 hour
Practical classes				
1.	Handling different types of Laboratory animals- Preparation of beds. Methods of handling of laboratory animals safely and gender identification of different animals. Observing the normal and abnormal behavior of the animals. Labeling of a sample cage used in the animal facility.		Practical 1-2 class	4 hours
2.	Demonstration of anaesthetics in rat and mice for experiment.		Practical 1 - 1 class	2 hours
3.	Safe restraining of animals during blood collection. Use of restraining instruments during blood collection in rat, mice and rabbit. Blood collection in different animals through different routes. Drug administration through different routes.		Practical 1-3 class	6 hours
4.	Methods and ethical procedure of Euthanasia. Drugs used in Euthanasia and disposal of dead animals. Other surgical procedures for killing of experimental animals.		Practical 1 -1 class	2 hours

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5.	Demonstration of necropsy procedure in laboratory animals. Collection and preservation of different tissues for histopathological study.	Practica I-I class	2 hours
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Reference book & resources (*If Any*)

1. Handbook of Laboratory Animal Anaesthesia and Pain Management Rodents. 1st edition, Edited by Cholawat Pacharinsak, Jennifer C. Smith.
2. Laboratory Animal and Exotic Pet Medicine: Principles and Procedures, 2nd Edition, Margi Sirois.
3. Care and Management of Laboratory and Pet Animals. Y.B. Rajeshwari, K. Satyanarayan, S.B. Prasanna.