

Centre for Medical Biotechnology

Name of the Certificate Course -Laboratory Animal Experimentation

Course Code	24 CC-CMBT1	Course Credits	(L: 2 T:0 P: 0)
Max. Marks	35 + 15 (IA)	Time of end term examination	3 Hours
Learning Objectives: 1. To educate the students on the needs, concepts and principles of laboratory animal experimentation 2. To give students virtual experience of injections and surgical procedures 3. To give students experience with anesthesia and analgesia in laboratory animals. 4. To provide students the current guidelines of CPCSEA regarding animal experimentation 5. To educate the students about the alternatives to animal usage			
Learning Outcomes: The students will develop 1. A holistic perspective of designing and execution of laboratory animal experiments 2. An understanding of the principles of anesthesia and analgesia 3. Understanding how to care and manage laboratory animals 4. Information on 3 R's principle in laboratory animal field 5. Alternatives to lab animal research			
Unit - I			
Introduction and scope of Animals in biomedical research, General biology and taxonomy, CPCSEA and IAEC regulatory guidelines, Ethics in Lab animal research, 3 R concept in experiment designing, Alternatives to animal use			
Unit – II			
Biology and husbandary of laboratory mice, rat & rabbit, Sterilization and disinfection technique, Biosafety and occupational hazard, Quality control in lab animals			
Unit – III			
Mice, Rat, Rabbit handling and restraining methods, Different injections techniques, Blood collection techniques, Anesthesia and analgesia, Euthanasia methods			
Unit – IV			
Animal acquisition and maintenance of records, Accreditation of animal facilities, Selection, care, and management of breeding stock for commercial purpose, Care of new born & growing stock, Disposal of wastes			

Suggested Readings:

1. Essentials of Laboratory Animal Science: Principles and Practices, Edited by P. Nagarajan, Ramachandra Gudde, Ramesh Srinivasan Springer Singapore, January 2021 978-9-81-160986-2, 978-9-81-160987-9 [10.1007/978-981-16-0987-9](https://doi.org/10.1007/978-981-16-0987-9)
2. Handbook of Laboratory Animal Science Essential Principles and Practices Edited By Jann Hau, Steven J. Schapiro CRC Press 9780429439964 <https://doi.org/10.1201/9780429439964>
3. A Manual for Laboratory Animal Management By (author): Jonathan David Ward (Biomedical Research Consultants Pte Ltd) <https://doi.org/10.1142/6682>
4. Guide For The Care And Use Of Laboratory Animals, Committee for the Update of the Guide for the Care and Use of Laboratory Animals Institute for Laboratory Animal Research Division on Earth and Life Studies, The National Academies Presss, USA
5. The Clinical Chemistry of Laboratory Animals By Judith S. Prescott CRC Press 9781420091144, 142009114X
6. Laboratory Animals Pocket Reference Set, CRC Press, ISBN 9780367261504