SYLLABUS FOR THE BATCH FROM YEAR 2025 TO 2026

FOR

Certificate Course in Animal Models in Biomedical Research

(Credit Based Evaluation and Grading System)

SEMESTER-I

EXAMINATIONS: 2025-2026

Department of Pharmaceutical Sciences

In collaboration with

Directorate of Open & Distance Learning and Online Studies

GURU NANAK DEV UNIVERSITY AMRITSAR

Certificate Course in Animal Models in Biomedical Research (Semester System) Offered by Department of Pharmaceutical Sciences Directorate of Open & Distance Learning and Online Studies, Guru Nanak Dev University, Amritsar

Eligibility

- +2 or equivalent examination
- Any student pursuing Bachelor Degree, Master Degree, M.Phil., Ph.D. from GNDU campus constituted or affiliated college.

Paper Code	Subject	Marks			Credits
		Internal Assessment	End Term	Total	
ODAMBR111T	**Basics of Animal Experimentation**	30	70	100	4
ODAMBR112T	**Animal Models -I**	30	70	100	4
ODAMBR113T	**Animal Models -I**	30	70	100	4
ODAMBR114P	**Project work**				4
Total Marks & Credits					**16**

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Subject Name: Basics of Animal Experimentation

Subject Code: ODAMBR111T

SEMESTER-I

Time: 3 hours **Max. marks: 100 marks**

Internal Assessment: 30 marks

End term: 70 marks

Section A

a. Ethics in animal experimentation
b. Animal welfare, national/international guidelines for animal welfare

Section B

a. Commonly used animals
b. Introduction to experimental techniques
c. Commonly used anesthesia, euthanasia methods in experimental animals

Section C

a. Ethical evaluation of research proposals
b. Good laboratory practices
c. Animal house requirements

Section D

a. Bioassays – in vitro and in vivo methods

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Animal Models –I

Subject Code: ODAMBR112T

SEMESTER-I

Time: 3 hours **Max. Marks: 100 marks**

Internal Assessment: 30 marks

End term: 70 marks

Section A

a. Animal models for evaluation of:

- Anti-hypertensive agents
- Anti-anginal drugs
- Anti-congestive heart failure agents
- Anti-arrhythmic agents

Section B

a. Models for evaluation of

- Anti-depressant drugs
- Anti-anxiety agents

Section C

a. Models for evaluation of

- Analgesics agents
- Anti-inflammatory agents

Section D

a. Animal models for evaluation of

- Anti-psychotics agents
- Anti-epileptic agents

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Animal Models –II

Subject Code: ODAMBR113T

SEMESTER-I

Time: 3 hours **Max. Marks: 100 marks**

Internal Assessment: 30 marks

End term: 70 marks

Section A

a. Evaluation models for anti-diabetic agents: Non-genetic and genetic models
b. Screening methods for Nootropic agents

Section B

a. Animal models for evaluation of hepatoprotective
b. Models of evaluation of renoprotective agents

Section C

a. Animal models for evaluation of:

- Anti-ulcer agents
- Anti-diarrheal drugs
- Laxative agents
- Anti-emetic agents

Section D

a. Animal models for evaluation of anti-asthmatic agents
b. Limitations of animal experimentation
c. Alternatives to animal models

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Project Work

Subject Code: ODAMBR114P

SEMESTER-I

The student shall prepare a detailed project on any of the areas discussed in aforesaid topics. The project report submitted by the student shall be evaluated by the course coordinator.