ETPLAS
Education & Training Platform for Laboratory Animal Science

ETPLAS EU-10 Module – Design of Procedures and Projects, Level 1

Course Contents

PART 1

INTRODUCTION TO EXPERIMENTAL DESIGN
The basic concepts of experimental design
Questions, hypotheses and predictions
Fidelity, discrimination and animal models

VARIABLES
What are variables?
Types of dependent variables
Measuring the effects of an independent variable

VARIABILITY AND EXPERIMENTAL DESIGN
Variability in experimental design
Sources of variability
Why control variability?

CONTROLLING VARIABILITY
Introduction
Randomisation
Blocking
Blinding
Control groups
Variability and animal housing

SAMPLE SIZES
How many animals do we need?
Experimental units
Replication and pseudoreplication

PART 2

Significance and type 1 and 2 errors
Variability and statistical analyses
Types of data and types of analyses

CORRELATIONAL AND MANIPULATIVE STUDY DESIGNS
Correlational designs
Manipulative designs

FACTORS AND LEVELS
Factors and levels
Including more than one factor
How many levels?How many levels? 100 Percent Complete

FULLY RANDOMISED AND RANDOMISED BLOCK DESIGNS
Fully randomised designs
Randomised block designs
An alternative to blocking - use of covariates

LATIN SQUARES AND FACTORIAL DESIGNS SUBHEADINGS
Latin squares
Factorial designs

REPEATED MEASURES AND CROSSOVER DESIGNS
Within-subjects designs - repeated measures and cross-over designs
Repeated-measures designs
Cross-over design, a more complex example