

Summary Information

Module Code	4503YAUZOO
Formal Module Title	Experimental Techniques
Owning School	Biological and Environmental Sciences
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 4
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Yunnan Agricultural University

Learning Methods

Learning Method Type	Hours
Lecture	6
Practical	72

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-PAR	PAR	January	12 Weeks

Aims and Outcomes

Aims	This course is practical laboratory based and introduces students to a range of techniques to complement their theoretical knowledge. Students will gain an understanding of the practical skills and standardised laboratory methods necessary for microbiology, pharmacology and pathology studies in animals. Students will learn how to handle laboratory instruments and equipment; master laboratory diagnostic methods of pathogenic bacteria, be able to independently analyse experimental results and phenomena, and write standardised experimental reports. Training in microscope observation and ability and methods of pharmacokinetic methods will be covered.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Apply, consolidate and expand relevant theoretical knowledge, enhance perceptual knowledge of theoretical knowledge, and achieve the goal of combining theory with practice.
MLO2	2	Independently observe and correctly describe the basic characteristics of pathological specimens and section of pathological changes.
MLO3	3	Master the incompatibility and adverse drug reactions of commonly used drugs and the action principle and toxicology of pharmacological drugs.
MLO4	4	Through the observation of functional and morphological changes, connect clinical characteristics with theoretical knowledge and conduct comprehensive analysis of common diseases and pathological processes.
MLO5	5	Grasp the basic operation skills of animal experiments, and cultivate a rigorous scientific attitude and practical ability.

Module Content

Outline Syllabus	The main teaching content of this course includes the basic purpose of experiments and experimental design, and will cover general experimental techniques including: use of microscope oil immersion and observation of basic morphology and structure of bacteria, preparation and staining of bacterial smears, preparation of culture medium, isolation, culture and transplanted of bacteria and fungi, isolation and culture of bacteria and observation of culture characteristics, physiological and biochemical tests of bacteria, bacterial susceptibility test, animal test method, isolation and identification of staphylococci, isolation and identification of enterobacteria, chicken embryo culture. Specific experimental techniques including: the characteristics of general and histological lesions, congestion, haemorrhage, infarction, and thrombosis, and their occurrence mechanisms; general and histological features of atrophy, granule degeneration, vesicular degeneration, myxoid degeneration, amyloidosis, steatosis and necrosis; compensatory hypertrophy, granulation tissue, wound healing, fracture healing, mechanization and encapsulation; the morphological characteristics of formation and calcification; the general and histological characteristics of various types of inflammation; the morphological and histological characteristics of common livestock and poultry tumours, and animal experiments. The influence of drugs on saliva secretion; the determination method of LD50 of drugs; the incompatibility of drugs; the toxic reaction and rescue of streptomycin; the influence of adrenaline on the local anaesthesia of Procaine; the observation of the general anaesthesia effect of tachyporin on rabbits; the observation of the antifoam effect; the catharsis mechanism of wax; nitrite poisoning and its rescue.
Module Overview	
Additional Information	Through the study of this module the students will learn to apply their theoretical knowledge in a practical experimental setting. They will cover the pathological characteristics of basic pathological processes, and use these theories and knowledge to analyse and solve clinical practical problems.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Exam	Written exam	16	2	MLO1, MLO4, MLO5
Practice	Experimental practice	16	0	MLO1, MLO2, MLO4, MLO5
Exam	Written exam	18	2	MLO1, MLO4, MLO5
Practice	Experimental practice	18	0	MLO1, MLO2, MLO4, MLO5
Report	Report	16	0	MLO1, MLO3, MLO5
Exam	Written exam	16	2	MLO1, MLO2, MLO3, MLO5

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Rachael Symonds	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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