

## Liverpool John Moores University

Title: Molecular Biology and Pharmacology  
Status: Definitive  
Code: **4502YAUZOO** (127905)  
Version Start Date: 01-08-2021

Owning School/Faculty: Pharmacy & Biomolecular Sciences  
Teaching School/Faculty: Yunnan Agricultural University

Team	Leader
Rachael Symonds	Y

**Academic Level:** FHEQ4      **Credit Value:** 20      **Total Delivered Hours:** 76  
**Total Learning Hours:** 200      **Private Study:** 124

### Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	64
Practical	8

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Written exam covering lecture material on nucleic acids and proteins	30	2
Exam	Poster	Written exam covering lecture material on pharmacology	30	2
Test	Test	Test covering molecular biology material	5	
Report	report	Practical report covering molecular biology experiments	15	
Test	Test	Test covering pharmacology material	20	

### Aims

*This course focuses on the structure of biological macromolecules such as nucleic acids and proteins of animals, and the transmission of genetic information and cellular information. The aim is mainly to teach students the basic theories and basic knowledge of molecular biology techniques in animal medicine, so that students can master the basic theories and basic knowledge between molecular biology and animal medicine, and to master the molecular biology technology correctly. This course is a good foundation for the follow-up professional courses and the use of molecular biology methods after graduation.*

*The course then focuses on the basic theories of animal pharmacology, and the correct use of drugs.*

## **Learning Outcomes**

After completing the module the student should be able to:

- 1 Master the basic requirements of the molecular biology laboratory
- 2 Master bacterial culture, such as the culture of E. coli
- 3 Understand the basic methods of bioinformatics
- 4 Understand the fundamental structures of nucleic acids and proteins
- 5 Master and understand the basic concepts and knowledge of drugs, the types of drugs in pharmacology and the characteristics of the drugs and master the main role of drugs and their applications and reactions
- 6 Master the principle of action of various drugs and learn to use drugs correctly, pay attention to incompatibility and prevent drug resistance

## **Learning Outcomes of Assessments**

The assessment item list is assessed via the learning outcomes listed:

Written exam	1	2	3	4
Written Exam	4	6	5	
Molecular biology test	1	2	3	4
Practical report	1	2	3	4
Pharmacology test	4	6	5	

## **Outline Syllabus**

*Through the study of this course, the students will master the basic requirements of the molecular biology laboratory, and improve their biological safety awareness. They will master the basic operations of molecular biology experiments, and correctly use the experimental techniques of nucleic acid research, and understand the relevant experimental techniques of protein research. This course will help the students correctly use molecular biology techniques in subsequent scientific research. Students will also study pharmacology and the interaction between drugs and animals. The students will master the concepts of drugs, poisons, preparations and dosage forms, understand the concepts of pharmacokinetics and*

*pharmacodynamics, master and understand the types of drugs in the pharmacology and the characteristics of the drugs, and the rational use of antimicrobials and anti-parasitic and prevent the emergence of drug resistance.*

### **Learning Activities**

The module content will be delivered through lectures and several stage of practical activities and a final exam, to promote the achievement of learning goals.

### **Notes**

The students will build on molecular biology and biochemical foundations from level 3 to apply molecular biology techniques to detect diseases and use these methods accurately in subsequent research through the study in animal medicine. This course will help students learn to use drugs correctly, especially drugs together, pay attention to the incompatibility between drugs, and prevent the drug resistance.