

Liverpool John Moores University

Title: Bioinformatics
Status: Definitive
Code: **6505YAUBIO** (127893)
Version Start Date: 01-08-2021

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

Team	Leader
Katie Evans	Y

Academic Level: FHEQ6
Credit Value: 10
Total Delivered Hours: 42
Total Learning Hours: 100
Private Study: 58

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	24
Practical	16

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Exam	40	2
Report	AS2	Online assignment	50	
Test	AS3	Problem-based task using biological software	10	

Aims

Bioinformatics is an emerging interdisciplinary subject that combines molecular biology, genomics, big data analysis, and computer networks. It is one of the major frontiers of life sciences and natural sciences. Bioinformatics is a major elective course for biotechnology majors and an elective course for students majoring in agriculture.

The aim of the module is to provide students with an understanding of the basic terminology, principles, and research contents of bioinformatics, to learn using important internet biological databases and analytical tools, and to master some internet-based bioinformatics software through problem-based and task-based learning methods. The module is designed to improve the ability of students to analyse and solve problems in their work, study and future research work.

Learning Outcomes

After completing the module the student should be able to:

- 1 Describe the basic research methods and related bioinformatics databases, and master some of them.
- 2 Use information technology to analyse and explore the biological significance in biomolecular information.
- 3 Analyse biological problems by using biological software, predict and analyse the results of molecular biological experiments.

Learning Outcomes of Assessments

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

Exam	1	2	3
Report	1	2	3
Test	1	2	3

Outline Syllabus

The module covers the acquisition and processing of biological data, data retrieval of biological databases, the alignment and analysis of nucleic acid and protein sequence, gene prediction and annotation of genome, the analysis and prediction of protein structure, and the evolution and phylogeny of biological molecules.

Learning Activities

The module content will be delivered via multimedia presentations, online demonstrations and online exercises.

Notes

The module relies upon, and is focused on network databases and online software, students will therefore require internet connection.