

## Liverpool John Moores University

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Title: Molecular Forensics  
Status: Definitive  
Code: **5007FSBMOL** (117440)  
Version Start Date: 01-08-2016

Owning School/Faculty: Pharmacy & Biomolecular Sciences  
Teaching School/Faculty: Pharmacy & Biomolecular Sciences

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**Academic Level:** FHEQ5      **Credit Value:** 24      **Total Delivered Hours:** 55  
**Total Learning Hours:** 240      **Private Study:** 185

### Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	30
Practical	12
Seminar	11

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Exam	50	2
Practice	Prac	Practical Report	30	
Presentation	Pres	Presentation	20	

## Aims

*To provide knowledge of current techniques for human Identification and specifically DNA forensic analysis*

## Learning Outcomes

After completing the module the student should be able to:

- 1 Discuss the principles of current techniques used for human DNA analysis.
- 2 Evaluate the applications and limitations of DNA technology to forensic science.
- 3 Interpret and analyse scientific data

## Learning Outcomes of Assessments

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

Examination	1	2
Practical report	3	
Presentation	1	2

## Outline Syllabus

*DNA Technologies:*

*Analysis of DNA: e.g. restriction analysis, genome sequencing, polymerase chain reaction and related techniques, DNA array technology*

*Analysis of human DNA: e.g. restriction fragment length polymorphism (RFLP), short tandem repeat (STR), microsatellite and single nucleotide polymorphism (SNP), Copy Number Variation (CNV) analysis; use of mitochondrial DNA in forensic investigations. Quality assurance issues and analysis artefacts.*

*Bioinformatics: STR markers, PCR primers, SNP data mining related molecular techniques such as serology/ immunology*

## Learning Activities

Lectures, student-lead seminars and practicals

## Notes

The module focuses primarily on DNA techniques and their impact on forensic

science.

Skills developed during this module include: analysing and solving problems, teamwork, initiative, creativity, written and oral communication, numerical reasoning, personal planning and organisation, information and communication technology, as well as subject-specific skills.