

Liverpool John Moores University

Title: FIRE INVESTIGATION
Status: Definitive
Code: **7102FSBMOL** (123658)
Version Start Date: 01-08-2021

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

Team	Leader
Andrew Evans	Y
Jason Birkett	
Suzanne McColl	

Academic Level: FHEQ7 **Credit Value:** 20 **Total Delivered Hours:** 41

Total Learning Hours: 200 **Private Study:** 159

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	18
Practical	18
Workshop	4

Grading Basis: 50 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	exam	Exam	40	1

Aims

Understand fundamental scientific principles of fire science, fire dynamics and material science and demonstrate their application to fire investigation.

Critical consideration of all potential ignition sources

Interpretation of the physical evidence remaining after a fire and determination of the origin and cause of a fire - interpretation of smoke/ fire damage patterns.

*Current best practice for Fire Scene Examination and documentation.
Evidence identification and correct methods for preservation, collection and packaging.
Laboratory analysis and interpretation of case samples.*

Learning Outcomes

After completing the module the student should be able to:

- 1 Analyse and investigate scientific theories of fire science and fire dynamics.
- 2 Develop critical and analytical skills involving the principles, practices and techniques of fire investigation.
- 3 Critically evaluate the appropriate techniques to conduct laboratory examinations on case samples.

Learning Outcomes of Assessments

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

Exam	1	2	3
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Outline Syllabus

- Chemical structure and bonding, physical and chemical properties/principles.*
- Thermodynamics and Fire dynamics, including heat flux, release and transfer*
- Principles of combustion, types and transitions between them*
- Stages of a fire*
- Material science and fire loading (Geometry of fuel and compartment)*
- Surface spread of flame, ventilation and smoke plumes (including design and construction)*
- Scene contamination and preservation (Cordons, scene log, PPE, scene safety)*
- Best practice investigation methodologies including case studies.*
- Determination of origin and cause of fire and potential ignition sources (including interpretation of smoke and fire damage patterns);*
- Documentation of the scene tape notes, photography, video etc.*
- Laboratory analysis of samples*
- Other forensic evidence.*

Learning Activities

Lectures
Practicals
Portfolio from practicals
Analysis of evidence and report writing

Notes

Module covers fundamental scientific principles of fire science, fire dynamics and material science and demonstrate their application to fire investigation.