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Title: FIRE INVESTIGATION  
Status: Definitive  
Code: **7002FSBMOL** (120793)  
Version Start Date: 01-08-2015

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

Team	Leader
Jo Morrissey	Y
Jason Birkett	
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**Academic Level:** FHEQ7      **Credit Value:** 20.00      **Total Delivered Hours:** 42.50  
**Total Learning Hours:** 200      **Private Study:** 157

### Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	18.000
Practical	18.000
Workshop	4.000

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	exam	Exam	40.0	2.50
Portfolio	portfolio	Portfolio	60.0	

### 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	
portfolio	1	2	3

## **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.