UNIVERSITI TEKNOLOGI MARA

FRS531: PHYSICAL EVIDENCE

Course Name (English)	PHYSICAL EVIDENCE APPROVED
Course Code	FRS531

MQF Credit	4

Course Description	This course gives an introduction to the operation and philosophy of a forensic scientist, the methods of working and requirements of scientific investigation in relation to crime scene, forensic laboratory and courtroom. This course covers an in-depth examination of field crime scene investigation and also examination and analysis of forensic physical and trace evidence. A successful crime investigation depends upon the collection and analysis of various kinds of evidence. Forensic scientists classify evidence in different ways and have specific ways of dealing with it. Physical evidence, which refers to any item that comes from a nonliving origin will be covered in-depth within this course. The most important kinds of physical evidence are fingerprints, tire marks, footprints, hairs, glass, and documents.

Transferable Skills	Forensic Scientific Investigations, Analysis, Interpretation and Report

Teaching Methodologies	Lectures, Blended Learning, Lab Work, Case Study, Practical Classes, Problem Based Learning (PBL), Discussion

CLO		
	CLO1	Explain the theories and principles in forensic science investigation and physical evidence analysis.
	CLO2	Display skills in forensic science through analysis of physical evidence.
	CLO3	Demonstrate managerial skills in report through forensic cases and problems.

Pre-Requisite Courses	No course recommendations

Topics
1. Introduction to Forensic Science
1.1) Forensic science : history and development
1.2) Present scope of forensic science
1.3) Application of forensic science at crime scene and court of law
2. The Crime Scene
2.1) Processing the crime scene
2.2) Submission of evidence to the laboratory
2.3) Safety
2.4) Transporting hazardous materials
2.5) Legal considerations at the crime scene
3. Physical Evidence
3.1) Principle of exchange
3.2) Common types of physical evidence
3.3) The significance of physical evidence
3.4) Forensic database
4. Fingerprint Identification
4.1) Historical development
4.2) Fundamental principles of fingerprints
4.3) Classification of fingerprint pattern
4.4) Individuality of fingerprints
4.5) Types of prints
4.6) Visualisation of latent prints
4.7) Preservation of developed fingerprint
4.8) Comparison of fingerprint
4.9) Fingerprint database

5. Hairs
5.1) Morphology of hair
5.2) Growth of hairs
5.3) Identification and comparison of hair
5.4) Collection and preservation of hair evidence

6. Glass
6.1) Types of glass
6.2) Properties of glass
6.3) Analysis of glass evidence
6.4) Glass fractures
6.5) Light bulb analysis

7. Document Examination
7.1) The origin of document
7.2) The examination of handwriting and signatures
7.3) The examination of printed documents
7.4) Printing and typewriting
7.5) Methods of forging documents: erasures, obliterations, and addition

8. Forensic Ballistics
8.1) Introduction to ballistics
8.2) Different types and parts of firearms
8.3) Bullet and cartridge and its importance
8.4) Bullet and cartridge cases comparisons
8.5) Gunpowder residue
8.6) Primer residue on the hands
8.7) Collection and preservation of firearms evidence
8.8) Automated firearm search system

9. Impression Evidence
9.1) Types of impression
9.2) Shoe and footprint
9.3) Tyre mark
9.4) Toolmark
9.5) Lifting and comparison of impression evidence

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Case Study	Case study of document examination	20%	CLO3
	Test	Test	25%	CLO1
	Written Report	Lab Report	15%	CLO2

Reading List	Recommended Text	• Richard Saferstein 2018, *Criminalistics*, 12th Ed., Pearson USA [ISBN: 9780134477596]
	Reference Book Resources	• Henry C. Lee,Howard A. Harris 2011, *Physical Evidence in Forensic Science*, Third Ed., Lawyers & Judges Publishing [ISBN: 1936360012]
		• Stuart H. James,Jon J. Nordby 2009, *Forensic Science*, Third Ed., CRC Press USA [ISBN: 1420064932]
		• Max M. Houck,Jay A. Siegel 2010, *Fundamentals of Forensic Science*, Second Ed., Academic Press USA [ISBN: 0123749891]
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	