



UNIVERSITI TEKNOLOGI MARA

FRS481: FORENSIC SCIENCE II

Course Name (English)	FORENSIC SCIENCE II APPROVED
Course Code	FRS481
MQF Credit	4
Course Description	The course covers an in-depth examination of a selection of subjects in forensic science such as document examination, arson accelerant and explosives, drug analysis, forensic serology and DNA technology.
Transferable Skills	Crime Investigations and Evidence Analysis
Teaching Methodologies	Lectures, Blended Learning, Lab Work, Demonstrations, Field Trip, Case Study, Practical Classes, Problem Based Learning (PBL), Self-directed Learning
CLO	<p>CLO1 State, write and explain the concepts, laws and theories in other forensic science fields, collection and preservation of forensic evidence and analysis of forensic evidence.</p> <p>CLO2 Verbally, visually (pictures) and discuss the concepts, laws and theories in other forensic science fields, collection and preservation of forensic evidence and analysis of forensic evidence.</p> <p>CLO3 3. Verify, assess & employ the concepts, laws and theories in other forensic science fields, collection and preservation of forensic evidence and analysis of forensic evidence.</p> <p>CLO4 Observe, plan, conduct and justify other forensic science fields, collection and preservation of forensic evidence and analysis of forensic evidence.</p> <p>CLO5 Communicate to peers verbally and to the facilitator in writing, the science investigations and justification in other areas of forensic science.</p> <p>CLO6 Collaborate, motivate and truthful with team members in both the labs and in the classroom.</p>
Pre-Requisite Courses	No course recommendations
Topics	
1. 1.0 Physical Analysis I 1.1) 1.1 The use of various microscope in the identification of glass, paints and soil. 1.2) 1.2 Physical properties glass and paint. 1.3) 1.3 Comparing glass and paint fragments. 1.4) 1.4 Glass fracture. 1.5) 1.5 Collection and preservation of glass and paint evidence. 1.6) 1.6 Analysis of glass and paint evidence.	
2. 2.0 Physical Analysis II 2.1) 2.1 Forensic characterization of soil. 2.2) 2.2 Density gradient analysis of soil. 2.3) 2.3 Tire, shoe-print marks and impression. 2.4) 2.4 Collection and preservation of various marks. 2.5) 2.5 Lifting and comparison using various casting materials.	
3. 3.0 Forensic Ballistics 3.1) 3.1 What is ballistics? 3.2) 3.2 Bullet comparisons. 3.3) 3.3 Cartridge cases. 3.4) 3.4 Gunpowder residues. 3.5) 3.5 Primer residues on the hands. 3.6) 3.6 Serial number restoration. 3.7) 3.7 Collection and preservation of ballistic evidence. 3.8) 3.8 Tool marks and other impression.	

4. 4.0 Document Examination I

- 4.1) 4.1 The Origin of Document.
- 4.2) 4.2 The Examination of Handwriting,
- 4.3) 4.3 The Examination of Signatures.
- 4.4) 4.4 Collection and preservation of document evidence I.
- 4.5) 4.5 Analysis of document evidence I.

5. 5.0 Document Examination II

- 5.1) 5.1 The Examination of Photocopiers, Printers and Fax.
- 5.2) 5.2 The Examination of Printers
- 5.3) 5.3 Alterations, Erasures, and Obliterations
- 5.4) 5.4 Methods of forging documents
- 5.5) 5.5 Other Document Problems
- 5.6) 5.6 Collection and preservation of document evidence II.
- 5.7) 5.7 Analysis of document evidence II.

6. 6.0 Fingerprint Identification I

- 6.1) 6.1 History of fingerprinting.
- 6.2) 6.2 Fundamentals principles of fingerprints.
- 6.3) 6.3 Classification of fingerprints.
- 6.4) 6.4 Collection and Preservation of Fingerprint evidence

7. 7.0 Fingerprint Identification II

- 7.1) 7.1 Various Methods of detecting fingerprints.
- 7.2) 7.2 Collection and Preservation of developed prints.
- 7.3) 7.3 Automated Fingerprint Identification Systems.
- 7.4) 7.4 Digital Imaging for Fingerprint Enhancement.

8. 8.0 Forensic Anthropology

- 8.1) 8.1 Identification of Human and Animal skeletons.
- 8.2) 8.2 Identification of Long Bones.
- 8.3) 8.3 Determining Age and Sex from Skull.
- 8.4) 8.4 Determining Sex from Pelvis.

9. 9.0 Medical Jurisprudence

- 9.1) 9.1 Identification of Living and the Dead.
- 9.2) 9.2 Time of Death.
- 9.3) 9.3 Manner of Death
- 9.4) 9.4 Homicides, Suicide, and Accidental death.
- 9.5) 9.5 Examination of Rape Victim and Unnatural Sexual Offences.

10. Forensic Entomology

- 10.1) 10.1 Introduction to Forensic Entomology
- 10.2) 10.2 Insects and decomposition
- 10.3) 10.3 Identifying flies that are important in forensic entomology
- 10.4) 10.4 Sampling at the crime scene
- 10.5) 10.5 Calculating the postmortem interval
- 10.6) 10.6 The forensic entomologist in court

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	n/a	10%	CLO4 , CLO5 , CLO6
	Test	Test 1	10%	CLO1 , CLO2 , CLO3
	Test	Test 2	10%	CLO1 , CLO2 , CLO3
	Test	Test 3	10%	CLO1 , CLO2 , CLO3
	Written Report	Lab report	20%	CLO3 , CLO4 , CLO5 , CLO6

Reading List	Recommended Text	<ul style="list-style-type: none"> Richard Saferstein 2014, <i>Criminalistics: An Introduction to Forensic Science</i>, 11 Ed., Prentice Hall USA [ISBN: 0133458822] Andrew R. W. Jackson, Julie M. Jackson 2011, <i>Forensic Science</i>, 3 Ed., Pearson Prentice Hall USA [ISBN: 0273738402]
	Reference Book Resources	<ul style="list-style-type: none"> Suzanne Bell 2012, <i>Forensic Chemistry</i>, 2 Ed., Prentice Hall USA [ISBN: 0321765753] Peter White 1998, <i>Crime Scene to Court</i>, Springer-Verlag Royal Society of Chemistry USA [ISBN: 0854045392]
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	