Unit 1- Introduction to Forensics
Unit 1  *Forensic Skills*
By the end of this unit you will be able to:

1.1 Define observation and describe what changes occur in the brain while observing.
1.2 Describe examples of factors influencing eyewitness accounts of events.
1.3 Compare the reliability of eyewitness testimony with what actually happened.
Unit 1
By the end of this unit you will be able to:

- Explain how the different types of evidence are observed and collected.
- Practice recording and preserving a crime scene.
Forensic Science Defined:

**Forensic Science** (or Criminalistics) is the use of science & technology to enforce civil & criminal laws.
Services of Forensic Labs

- Physical Science Unit – Chemistry, physics
- Biology Unit – DNA, body fluids analysis, hair & fibers, botanical
- Firearms Unit – guns, bullets, gunpowder
- Documents Unit – handwriting, printed
- Photography Unit – digital imaging documentation
Services of Forensic Labs

- Toxicology Unit – drugs, poisons
- Fingerprint Unit – latent fingerprints
- Polygraph Unit – lie detectors
- Voiceprint / sound Unit – identification
- CSI – Crime Scene Investigation Unit – handles on site examination for evidence.
Services of Forensic Labs

- Forensic Psychiatry Unit – mental evaluation / monitoring
  - Forensic Odontology - dental ID
  - Forensic Engineering – failure analysis
  - Forensic Computer Unit- digital analysis
Civil vs. Criminal Law

CIVIL LAW

- filed by a private party.
  - a corporation
  - an individual

- Penalty: a guilty defendant pays the plaintiff for losses caused by their actions.
  - no incarceration

CRIMINAL LAW

- filed by the government
- Penalty: a guilty defendant is punished by
  - incarceration (in jail/prison)
  - fine paid to the gov’t
  - execution (death penalty)

- Crimes are divided into 2 classes:
  - misdemeanors - < 1 year incarceration
  - felonies - 1+ year sentence
Introduction

- A forensic investigator must be able to clearly:
  - Observe
  - Interpret
  - Report
**Figure 1-1** A crime scene is often laid out in a grid to ensure that all evidence is found.
What is an Observation?

- What a person perceives using his or her five senses

- We are constantly collecting information through observations: sight, hearing, smell, taste, and touch.
  - We cannot pay attention to everything all at once.
    - We pay attention to things likely to be important like changes in the environment: new movement, sound, etc.

- Filtering is an unconscious process that helps the brain deal with all the stimuli and information that bombards it.
What Is Observation? (continued)

**Figure 1-2** *How information is processed in the brain.*
What Is Observation? (continued)

- Our brains selectively take in information.
- We unconsciously apply filters.
- Paying attention to the details of your surroundings requires a conscious effort.
What Is Observation? (continued)

Perception is

• Limited
• Faulty
• Not always accurate
• Not always reflective of reality
If you can read this, you must be really smart!
Look at the chart below and do your best to say the color, not the word:

Blue   Red   Orange
Black  Yellow Green
Purple Yellow Pink
Yellow Blue   Black
Red    Purple Yellow
Black  Orange Red

This is an example of left brain/right brain conflict!
Your right brain tries to say the color, but your left brain insists on reading the word.
Observations by Witnesses

- Observations are affected by:
  - Emotional states
  - Whether you are alone or with a group of people
  - The number of people and/or animals in the area
  - The type of activity that is going on around you
  - How much activity is occurring around you
Figure 1-3  This eyewitness is searching a mug book for previous offenders who might have committed the crime she witnessed.
Eyewitness Accounts

- Prejudices
- Personal beliefs
- Motives
- Any lapse in time since the event
The Innocence Project

- Created by Barry C. Scheck and Peter J. Neufeld in 1992
- Benjamin N. Cardozo School of Law
The Innocence Project (continued)

- Used DNA to examine post-conviction cases to conclusively decide guilt or innocence
- Faulty eyewitness identification accounted for up to 87% of wrongful convictions
How to be a Good Observer

1. Observe systematically

   • Start at one part of a crime scene and run your eyes slowly over every space.
   • Look carefully at everything you see.
   • When examining a piece of evidence on a microscope slide, look systematically in every part of the evidence.
How to be a Good Observer
(continued)

2. Turn off filters.
   • Consciously observe everything.
   • Act like a data-gathering robot.
How to be a Good Observer
(continued)

3. Avoid jumping to conclusions.
   • Concentrate on gathering all of the available information.
   • Leave the interpretation until all information is gathered.
4. Compensate for faulty memories.
   - Write down and photograph as much information as possible.
   - Documentation is also important when acting as an expert witness.
   - Even the verbal testimony of a forensic scientist requires proper documentation.
Figure 1-5 *Documentation is an essential part of observation.*
Observations in Forensics

- Forensic science
  - Is strictly concerned with uncovering evidence that stands as fact
  - Uses science to help in legal matters, such as crimes
Observations in Forensics (continued)

- A forensic investigator
  - Is not interested in making the suspect look guilty
  - Is only interested in collecting and examining physical evidence
  - Reports evidence to investigators and courts
What Forensic Scientists Do

- Find, examine, and evaluate evidence from a crime scene
- Apply scientific knowledge to analyze the crime scene
- Be a persuasive communicator who is able to convince a jury that his/her analysis is both reliable and accurate
Our ability to observe is affected by our environment and the natural filters of sensory information in our brains.

The observations of witnesses to crimes can be faulty, but in some cases can be precise.

The Innocence Project has found that up to 87 percent of their wrongful conviction cases resulted from flawed eyewitness testimony.
Police officers and crime-scene investigators are trained in good observation practices.

Forensic scientists find, examine, photograph, document, and evaluate evidence from a crime scene and provide expert testimony to courts.