Volume5 , Issue 8
SEPTEMBER 2017

TUCSIN 2017

CAREER FOCUS FORENSIC SCIENCE TECHNICIAN

Inside this issue:

Dear students

Ever watched TV shows like CSI and Bones? Do you enjoy finding clues to solve unresolved cases? Then forensic science may be a great opportunity to put your problem solving skills to the test. With the high crime rate, forensic investigation jobs in Namibia are crucial. Working with dead bodies and finding a potential killer is just part of this exciting career, but don't believe everything you see on TV shows. There is more than meets the eye. This job requires hard work, long hours of standing on your feet and having a strong stomach.
In this edition you can learn more about the areas of specialization and the requirements to become a Forensic Science Technician.

- Martina

BECOMING A FORENSIC SCIENCE TECHNICIAN

A forensic science technician handles evidence from crime scenes for police departments. These technicians are essential in helping to catch, convict, or acquit suspects in criminal matters. Forensic science technicians collect evidence and analyse the evidence in a laboratory and summarize their findings in written reports. They often testify in court, particularly if they have specialized areas of expertise such as fingerprinting, biochemistry, DNA analysis, blood spatter patterns, chromatography analysis, or handwriting analysis. Forensic science technicians may work for local, state, or federal law enforcement agencies, crime labs, the coroner's office, and hospitals. Techs may also offer their expertise as independent forensic science consultants. A forensic science technician may work in the field, in the laboratory, and in a legal setting.

SKILLS AND EXPERIENCE

Forensic science technicians should have the ability to use mathematics to solve problems, communicate effectively both written and orally, and find solutions to complex problems. Completing an internship in forensic science and possessing knowledge of laboratory equipment and safety procedures are also helpful. Techs must also possess the ability to think analytically. They must be able to handle stress while working individually and as a member of a team. They must also be able to effectively communicate the results of their findings both orally and in their written work. Additionally, they need to know how to collect evidence, without contaminating it, at a crime scene. They should have a strong stomach to deal with some very unpleasant crime scenes. They must also have knowledge of computers for data entry and analysis programs. Finally, forensic science technicians must be familiar with the legal process and court proceedings as they regularly testify in criminal cases.

AREAS OF SPECIALIZATION - FORENSIC SCIENCE

Fingerprinting: There are three main types of fingerprints: arches, whorls, and loops. Each of these has several subcategories. Most fingerprints have a delta (triangular formation) near their core. A visible print is patent while an invisible print is latent. Fingerprints are usually latent and can be found at just about any type of crime scene .

Document analysis: The vast majority of the crimes that take place involve paper or are committed on paper. Everything about the paper concerned is a potential clue. Document analysis includes handwriting analysis, fraud and forgery.

Firearms and ballistics: The science of ballistics allows matches to be made between firearms and their ammunition.

Explosives: This involves analysis of bomb components, that is, its power source, its initiator, and its explosive substance. If a bomb explodes, analysts examine the bomb's residue by scanning the debris for fragments of the bomb in order to piece together its composition.

Forensic anthropology: To a forensic anthropologist, truth lies embalmed in the marrow of the dead. By examining the various characteristics of a person's bones, certain deductions may be made about their age from the fusion of bones; diseases suffered, from bone erosions and anomalies; gender, from the size, characteristics and shape of bones; and race, from bone characteristics and shape

Chemistry and toxicology: To analyse substances for chemicals, including poisons and drugs, forensic scientists use such instruments as mass spectrometers, which provide molecular "fingerprints" of unknown substances; X-rays, to detect potassium cyanide and other chemical; di-electrometers, which send out electric impulses and record energy absorption, marking differences such as wall imperfections or different densities.

Behaviour profiling: Forensic analysts attempt to solve crimes by understanding a criminal's MO or "Modus operandi", which is the method by which a particular criminal commits a crime, including the time and place, type of crime, property involved, victim type, tools or implements used, disguises, props, or associates. Of significance are "signatures" or the psychological "calling cards" or imprints, some criminals are motivated to leave.

Blood: When a sample of blood is sent to a lab, as in any other science of identification, there are things that can be read from it, and others which remain elusive. Certain things about the donor can be determined from blood (excluding the process of DNA testing) such as whether it is animal or human and the blood grouping (A, B, AB & O), besides types of genetic markers, which are specific enzymes and proteins.

AREAS OF SPECIALIZATION - FORENSIC SCIENCE

Entomology: A dead body attracts flies. Forensic entomologists use the clues provided by flies to find out exactly how long the body has been dead.

DNA (deoxyribonucleic acid): DNA has been called the biological equivalent of fingerprints. As with every person, each DNA arrangement is unique, the only exception being in the case of identical twins.

Hair and fibres: Based on the theory of transfer, which states that when a person comes into contact with another person or place, there is a transference of evidence to that person and to that environment, and vice versa.

Photography: Photography when it was first developed, quickly replaced branding as the preferred means of identifying criminals. Now standardized criminal photographs, known as the "mug shots", are essential forensic tools.

Photo-identification: One of the first crime scene activities is the taking of photographs. Their value as evidence is obvious: they are visual testaments to an inaccessible point of the past; permanent records that allow other evidence to be preserved.

Surveillance: Film is an important part of surveillance, which is the secret monitoring of suspected criminals in the hopes of gaining vital information and which might lead to arrests, etc. Specialized equipment is necessary for long-range photography and for hidden cameras that must operate for long periods without maintenance.

Fraud Investigation : Entail determining the legitimacy of insurance claims or determining whether fraudulent activities are taking place within an institution. Investigators conduct research, review surveillance footage and conduct interviews.

Requirements

Secondary Education
A **HIGCSE/NSSCH** Grade 12 with science subjects is preferred, however, an outstanding **IGCSE/NSSCO** Grade 12 can be considered .

Compulsory Subjects:
Mathematics and Physical Science
Recommended subject
Life Science or Biology

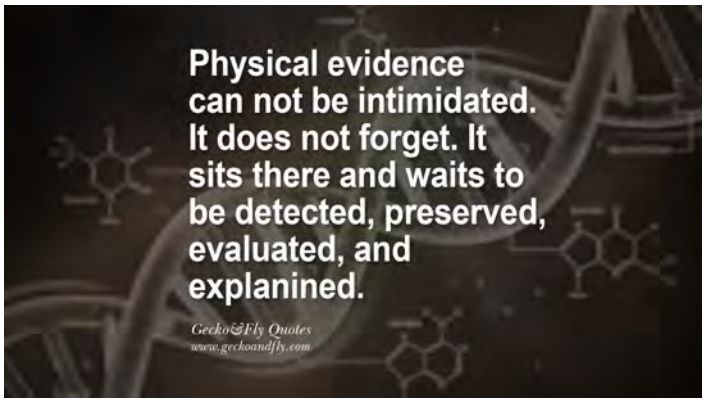
Tertiary Education & Training
Degree: BSc majoring in Chemistry, Analytical Chemistry or Pharmacology is recommended - all universities. Since 2012, however, the University of the Free State has offered courses for students to study forensic sciences from an undergraduate level. It also offers an honours course in forensics, as do Wits and UCT. A Bachelor`s Degree in forensic science is not offered in Namibia. However, a candidate can do two years of science at **UNAM** as an introductory course before applying at other institutions e.g. South African Universities.
Diploma: Forensic Investigations - UNISA, Univ Western Cape, Intec and Damelin. N.Dip: Chemistry / Analytical Chemistry. - CPUT, DUT, TUT, VUT, Univ of Johannesburg.

Personality
People employed as forensic scientists should be thinkers, good with details, good with putting puzzles together and are curious.

Work Opportunities
-Forensic scientists work in laboratories, at crime scenes, hospitals, mortuaries and universities.

———————————————————

Reference : Pace careers and NamCareers



We're on the web:
www.tucsin.org as well as on Facebook
Tel #: 061 224840
Williams@tucsin.org

Previous newsletters can be found on the TUCSIN website:
http://www.tucsin.org/index.php/en/project/documents-for-students/career-prospect.