COURSES OFFERED BY THE CHEMISTRY DEPARTMENT AT DUT 2022

1. GENERAL LABORATORY PRACTICE COURSE

Course Outline: This is a 3-day theoretical and practical training course to introduce the basic techniques in laboratory practice.

Content

- **Introduction to matter; mixtures and pure substances**
- **Elementary physical and chemical properties of substances**
- **Calibration of pipettes and burettes using density**
- **Standardization of a secondary standard**
- **Quantitative analysis using a titrimetric analysis**
- **General safety protocols.**

Cost per candidate: R6 500.

2. Basic GAS CHROMATOGRAPHY COURSE

Course Outline: This is a 3-day theoretical and practical training course to introduce the elementary operating principles of gas chromatography.

Content

- **Instrument familiarization, setting up and injection technique using GC.**
- **Influence of temperature and sample size on column efficiency.**
- **Quantitative analysis using GC**

Cost per candidate: R9 750.

3. Advanced GAS CHROMATOGRAPHY COURSE

Course Outline: This 5-day theoretical and practical training course will cover the more complex aspects of the theory and practice of gas chromatography.

Content

- **Review of separation theory**
- **Applications and use of a range of detectors specific to gas chromatography**
- **Column selection and installation**
- **Injector systems**
- **Split/splitless injections**
- **Quantitative analysis using GC**

Cost per candidate: R16 500.

4. Basic ATOMIC ABSORPTION SPECTROSCOPY COURSE

Course Outline: This is a 3-day theoretical and practical training course to introduce the elementary operating principles of Atomic Absorption Spectroscopy.

Content

- **Instrument familiarization, setting up and optimization of the AAS**
- **Preparation of standards and analysis of samples by the instrumental technique.**
- **Calibration and Quantitative analysis**

Cost per candidate: R9 750.

5. Advanced ATOMIC ABSORPTION SPECTROSCOPY COURSE

Course Outline: This is a **5-day** theoretical and practical training course that will cover the more complex aspects of the theory and practice of an Atomic absorption spectrometer.

Content

- **Review of basic theory of atomic spectroscopy**
- **Burner rotation technique**
- **Effect of slit-width.**
- **Calibration and Quantitative analysis**
- **Applications of AAS**

Cost per candidate: R16 500.