

# FOUNDATIONS OF DATA SCIENCE:

## ONLINE SHORT COURSE

*Offered through the Durban University of Technology (DUT) in partnership with INSETA*

### COURSE OUTLINE AND CALL FOR APPLICATIONS

In the context of the knowledge economy, data is considered a precious commodity. Data is surpassing oil as the world's most sought-after resource (Parkins, 2017). However, data in its raw form means little without the tools to extract meaning from it. Further, with the rise of exponential technologies and the strengthening of the 4th industrial revolution, the centrality of data for business continuity and sustainability is paramount. In the 21st century, understanding and harnessing the power of data is important for all organizations.

**“Data science is the ability to take data — to be able to understand it, to process it, to extract value from it, to visualize it, to communicate it — that’s going to be a hugely important skill in the next decades.” Hal Varian**

Data Science has been ranked as one of the hottest professions and the demand for data practitioners is booming. Further as professionals from various sectors find themselves having to incorporate elements of data science into their job roles, many are looking to upskill and better understand data science in order to effectively harness data in their job roles. Hence, data science skills are highly valued.

### TARGET AUDIENCE

- Levy-paying insurance companies registered with INSETA are eligible to submit applications towards this course.
- Lecturers from CET and/or TVET Colleges in South Africa

## COURSE AIMS AND OBJECTIVES

This course aims to equip professionals from various backgrounds with basic capabilities in Data science. The course will demonstrate the effectiveness of data science analytical tools for making sense of vast datasets in a real-world setting.

The Course will cover the following areas:

- Data Science Fundamentals
- Data Understanding and Preparation
- Data Exploration

## CONTENT

- Introduction to Data Science
- The Data Science Lifecycle (CRISP-DM)
- Introduction to Artificial Intelligence
- Supervised Machine Learning e.g.:
  - Decision Trees
  - k-Nearest Neighbors
  - Naive Bayesian

## SOFTWARE AND PLATFORM USE

- **RapidMiner** is a widely known and used software tool for data science and it has been chosen particularly for ease of implementation using GUI, and because it is available to use free of charge, as an open source data science tool.
- **Google Classrooms** is the platform through which all teaching and learning, and practical lab sessions will take place. All participants of the course must have a registered Gmail Account in order to access Google Classroom.
- **Microsoft Teams (MS Teams)** is the platform that will be used to deliver the online lectures. Participants will need an MS Teams account to access the lectures.

## **ENTRY REQUIREMENTS AND PRE-REQUISITES**

Entry is on a first-come-first serve basis. Interested delegates must have:

Pre-requisites

- Some Mathematical background
- Participants need to have a Gmail account in order to access Google Classrooms
- Computer Literacy
- Must have own laptop/computer
- Access to uninterrupted Internet connection for the duration of the course (This will be for your own cost and not reimbursable through INSETA or DUT)

## **COURSE DELIVERY**

This course will be delivered through online mode of delivery via Microsoft Teams (MS Teams). Course Material will be provided via Google.

## **LEARNING SCHEDULE**

Lectures will be offered in a duration of 2-hour daily sessions (08:30am to 10:30am Monday to Friday) via MS Teams over a period of one week per cohort (group). Practical lab sessions will be included in the programme. Delegates are expected to attend for the full duration in order to receive a Certificate.

## **CERTIFICATION**

- A Certificate of Attendance will be issued by DUT.

## **COST OF THE COURSE**

- The cost of the course is Free to Registered companies of INSETA and to CET/ TVET Colleges.
- INSETA will not compensate attendees for any additional costs of the attendee.
- The individual must register using their Levy Number or Reference Number provided by INSETA

## **UPCOMING COURSE DATES**

- Please see below list of dates.
- NB: Course will only commence upon minimum class number of 25 delegates per cohort. If enrolment numbers are low, then dates will be re-scheduled.
- Enrolment into each Cohort will be on a first-come, first-serve basis.

Cohort	Start Date	End Date
Cohort 1	08 May 2023	12 May 2023
Cohort 2	15 May 2023	19 May 2023
Cohort 3	22 May 2023	26 May 2023
Cohort 4	29 May 2023	02 June 2023
Cohort 5	05 June 2023	09 June 2023

## RSVP and ENROLLMENT

**Step 1: Please complete the short google form via the following link:**

<https://forms.gle/FHFsj0WgJrx6R3PT9> **Deadline: Monday, 20 March 2023**

**Step 2: Submit the following documents: Deadline: Tuesday, 04 April 2023**

**NB: Failure to submit the required documents as listed below will result in you not being registered onto the programme.**

- Certified Copy of ID
- Full Completed and Signed INSETA Worker Agreement Form
- Proof of Employment Letter from HR (DUT will assist and liaise with company to provide this)

NB: All copies must be clear and electronically scanned in PDF version.

All documents must be submitted to **Rasmi Singh** [RasmiS@dut.ac.za](mailto:RasmiS@dut.ac.za) with 'Data Science' in the subject line.