Department of Applied Information Systems in collaboration with the Institute for Intelligent Systems

Short Learning Programme

COMPUTATIONAL INTELLIGENCE FOR INDUSTRY

Purpose of the Program

The Department of Applied Information Systems, in collaboration with the Institute for Intelligent Systems is pleased to offer the short learning programme on Computational Intelligence for Industry. The University of Johannesburg is playing a leading role in driving the upskilling and reskilling of professionals as we enter the Fourth Industrial Revolution. A critical aspect of the Fourth Industrial Revolution is Artificial Intelligence, as it begins to drastically change the nature of our work environments and jobs. The purpose of this short learning programme is to provide professionals, from any area, with a working knowledge of key Artificial Intelligence and Machine Learning tools.

Upon completion of this short learning programme, participants will be able to perform data analytics and construct predictive models in their field of practice.

Entry Requirement

This short learning programme is at a South African National Qualification Framework (NQF) Level 8. Applicants require at least an NQF level 7 qualification, that includes basic mathematics (NQF level 5), or equivalent.

Timelines

Computational Intelligence for Industry is a one semester programme, held twice a year. From **March – June** and **July – November**. Contact the course coordinator for more details.

How to Apply

Visit the UJ homepage **www.uj.ac.za** and click on Study@UJ to apply for this program. All applications are done online.

Registration and Fees

Course Fees — R14 540
Mr Ronny Mabokela: **rmabokela@uj.ac.za**

Programme Overview

This programme is offered through a mix of lectures and practical (hands-on) sessions. Supporting study materials will be provided. The following topics will be covered:

- Introduction to Python
- Introduction to machine learning
- Basic Statistics and Probability Theory
- Naive Bayes Classifier
- Bayesian Networks
- Sensitivity Analysis
- Decision Trees
- Support Vector Machines (SVM)
- Instance based learning
    - K-Nearest Neighbor
    - K-Means Clustering
- Artificial Neural Networks
- Post-processing

Required mathematical and statistical foundation will also be provided to the participants at the start of the program.

Assessment

Assessments in this programme comprise of written tests, assignments, practical work and a written exam. Upon successful completion of the programme, participants will receive a certificate.

Enquiries

For further information and queries relating to this programme, you may contact:

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Disclaimer: The offering of the course is at the sole discretion of the Department

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