



University of Pretoria Yearbook 2025

Artificial intelligence 314 (COS 314)

Qualification Undergraduate

Faculty [Faculty of Engineering, Built Environment and Information Technology](#)

Module credits 18.00

NQF Level 07

Programmes [Bachelor of Information Science *Multimedia* \[BIS\]](#)

[BSc *Computer Science*](#)

[BSc *Information and Knowledge Systems*](#)

[BSc *Applied Mathematics*](#)

[BSc *Mathematics*](#)

[BSc *Physics*](#)

[BSc specialising in *Mathematics* 4-year programme](#)

[BSc specialising in *Physics* 4-year programme](#)

Prerequisites COS 110, admission to relevant programme

Contact time 1 practical per week, 2 lectures per week

Language of tuition Module is presented in English

Department Computer Science

Period of presentation Semester 1

Module content

The main objective of this module is to introduce a selection of topics from artificial intelligence (AI), and to provide the student with the background to implement AI techniques for solving complex problems. This module will cover topics from classical AI, as well as more recent AI paradigms. These topics include: search methods, game playing, knowledge representation and reasoning, machine learning, neural networks, genetic algorithms, artificial life, planning methods, and intelligent agents. In the practical part of this module, students will get experience in implementing

- (1) game trees and evolving game-playing agents;
- (2) a neural network and applying it to solve a real-world problem; and
- (3) a genetic algorithm and applying it to solve a real-world problem.

General Academic Regulations and Student Rules

The [General Academic Regulations \(G Regulations\)](#) and [General Student Rules](#) apply to all faculties and



registered students of the University, as well as all prospective students who have accepted an offer of a place at the University of Pretoria. On registering for a programme, the student bears the responsibility of ensuring that they familiarise themselves with the General Academic Regulations applicable to their registration, as well as the relevant faculty-specific and programme-specific regulations and information as stipulated in the relevant yearbook. Ignorance concerning these regulations will not be accepted as an excuse for any transgression, or basis for an exception to any of the aforementioned regulations. The G Regulations are updated annually and may be amended after the publication of this information.

Regulations, degree requirements and information

The faculty regulations, information on and requirements for the degrees published here are subject to change and may be amended after the publication of this information.

University of Pretoria Programme Qualification Mix (PQM) verification project

The higher education sector has undergone an extensive alignment to the Higher Education Qualification Sub-Framework (HEQSF) across all institutions in South Africa. In order to comply with the HEQSF, all institutions are legally required to participate in a national initiative led by regulatory bodies such as the Department of Higher Education and Training (DHET), the Council on Higher Education (CHE), and the South African Qualifications Authority (SAQA). The University of Pretoria is presently engaged in an ongoing effort to align its qualifications and programmes with the HEQSF criteria. Current and prospective students should take note that changes to UP qualification and programme names, may occur as a result of the HEQSF initiative. Students are advised to contact their faculties if they have any questions.