

# University of Pretoria Yearbook 2023

## Programming languages 333 (COS 333)

**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 \(Physics\)](#)

**Prerequisites** COS 110

**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 2

### Module content

Programming languages are the backbone for software development. Each language has its own different syntax and semantics, but there are many common concepts that can be studied and then illustrated through the languages. The module concentrates on issues of object orientation, including delegation, iteration and polymorphism. It surveys how languages provide the basic building blocks for data and control, as well as exception handling and concurrency. At the end of the module, students will be able to appreciate the rich history behind programming languages, leading to independent principles that evolve over time. They will be skilled at using a variety of programming languages, including new paradigms such as functional, logical and scripting, and will know how to learn a new language with ease. From this experience, they will be able to apply evaluation criteria for choosing an appropriate programming language in a given scenario.

### Regulations and rules

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

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.

#### **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 (HEQF) 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.