RBS

RIGA BUSINESS SCHOOL
Riga Technical University

Programming Languages Introduction

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BITL PMB774

COURSE AIMS

- Learn the concept of a programming language: how humans describe computations to be executed on a computer.

- Learn the tools for describing, defining, and implementing a programming language: syntax and semantics

- Learn different program description paradigms

  - Imperative

  - Functional

  - Logic

  - Declarative

  - Object-oriented

  - Hybrid

COURSE GRADING

- 30% - Weekly Quizzes + Participation

- 30% - Midterm - in class - around week 7

- 40% - Homework - 7 assignments –> automatic grade offer -> no exam required

- Optional extra credit assignment - can raise the grade by 1 point

COURSE TOPICS

Introduction to Programming Languages

Syntax and Semantics - BNF, EBNF, Syntax Diagrams

Imperative Programming Languages Overview - **Go** 'A better C'
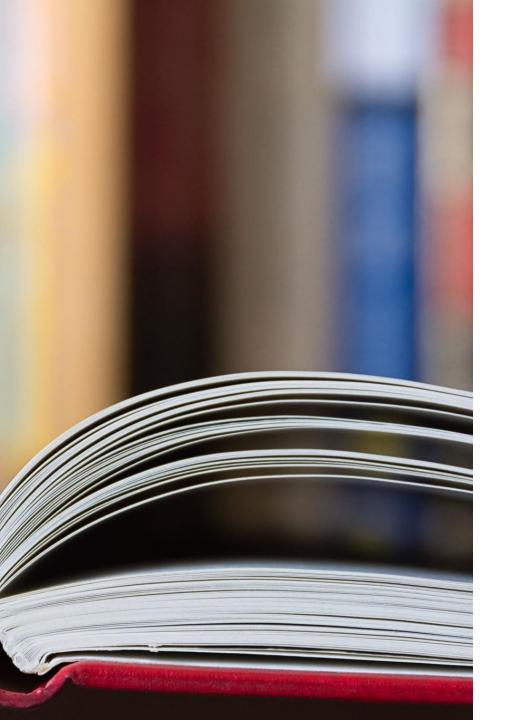
Functional Programming Languages -> **Clojure** 'A better Lisp'

Logic Programming Languages -> **Prolog**

Declarative Programming Languages -> **SQL**

Object-Oriented Programming Languages -> **Kotlin** 'A better Java'

Hybrid Programming Languages -> **Rust** 'A better C++ or Scala'

COURSE MATERIALS

Course Github Repository:
https://github.com/ValRCS/RBS_PBM774_Progra
mming_Languages

Books - not absolutely necessary - but can be
useful:

https://www.cengage.uk/c/programming-logic-
and-design-introductory-9e-
farrell/9781337109635/ - official book for this
course - however it is very general - lacks
language specific details

Concepts of Programming Languages, 12th
edition by Robert W. Sebesta - used to be the
main book for this course - still good if you have
access to it

Supplemental:
https://cs.brown.edu/courses/cs173/2012/book/
- Programming Languages: Application and
Interpretation by Shriram Krishnamurthi - free
online book - very good for functional
programming languages