# PROGRAMMING PARADIGMS


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# Background

In Programming and Algorithms, you learned the basics of imperative programming in C:

- Variables and assignments;
- Basic control structures;
- Basic data structures;
- Functions and parameters;
- Pointers and memory management.

# Background

In this course, you'll learn the basics of:

Object-oriented programming in Java

and

Functional programming in Haskell

# Lectures

- Wednesdays, 15.00 – 17.00, F3A08;
- Thursdays, 11.00 – 13.00, F1A02.

# Labs

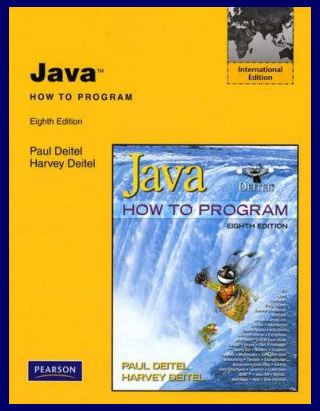
- Tuesdays, 11.00 – 13.00, TCR1;
- Fridays, 09.00 – 11.00, TCR1.

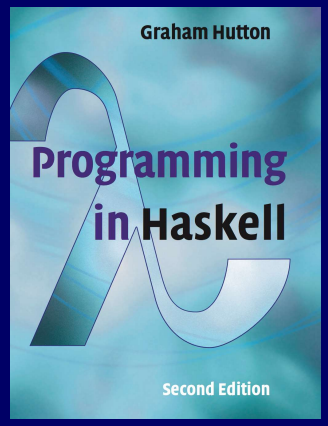
# Course Materials

Everything you need is available on Moodle:

# Textbook

In addition to our course materials, there is also a recommended textbook for each paradigm:



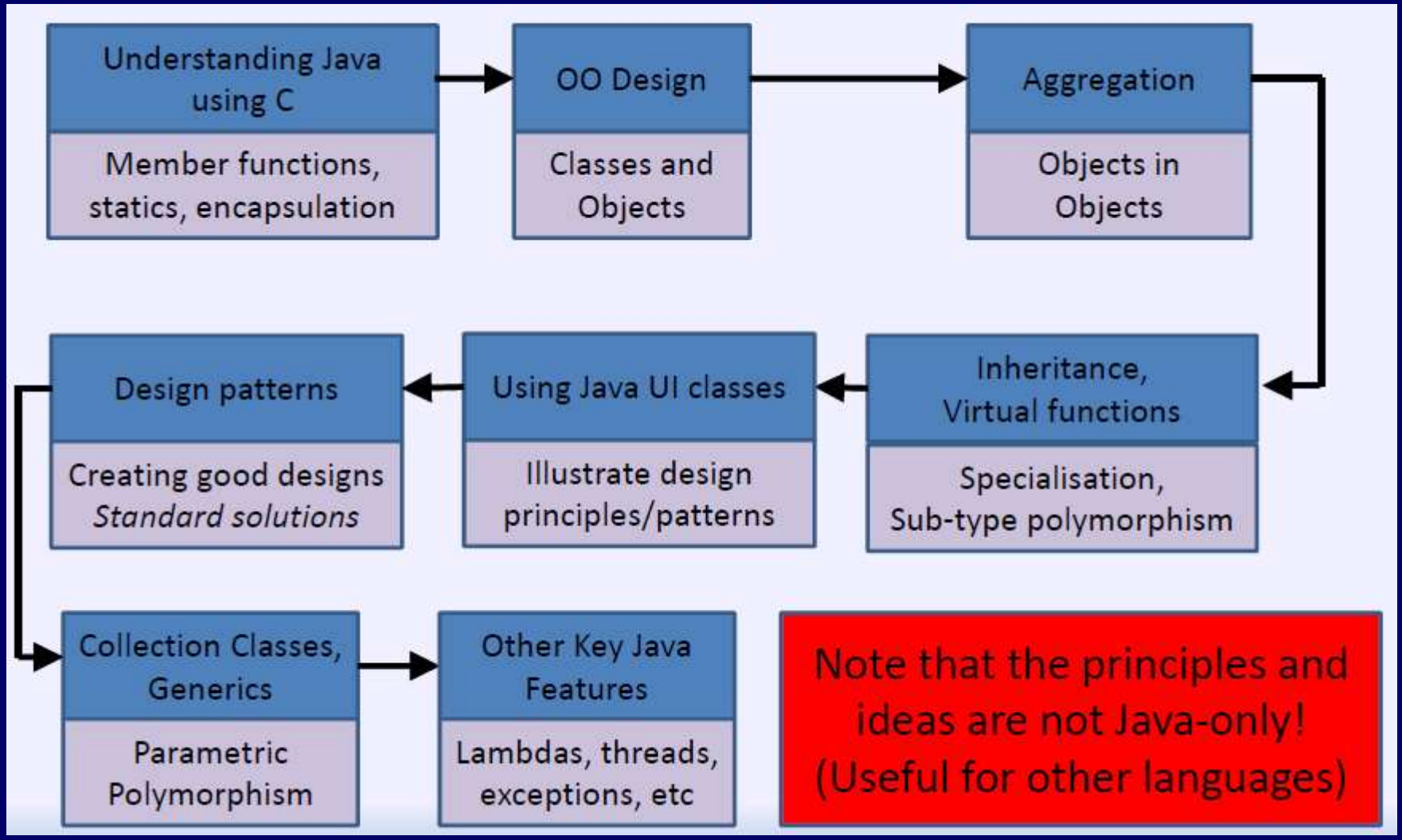



# Assessment

- A series of short exercise sheets (10%);
- Two programming courseworks (15%);
- One 2.5-hour written examination (75%).

The exercise sheets and courseworks will mainly be assessed in the labs.

# Object-Oriented Topics



# Functional Topics

| Basic Concepts |
| --- |
| Types and classes |
| Defining functions |
| List comprehensions |
| Recursive functions |
| Higher-order functions |

| Going Further |
| --- |
| Interactive programming |
| Declaring new types |
| The countdown problem |
| Lazy evaluation |
| Functional style |

Underlying principles are not specific to Haskell