

COMPI039 PROGRAMMING PARADIGMS

Ning Xue & Cheah Wooi Ping

MODULE INFORMATION

Ning Xue: Teaching Java

Room PMB435

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Office: PMB 435

Office Hours: Friday 9-11am

Cheah Wooi Ping: Teaching Haskell

Room PMB323

Email: Wooi-Ping.Cheah@nottingham.edu.cn

Office: PMB 323

Office Hours: Wednesdays 3pm-5pm

Contact:

You are welcome to visit us during office hours or contact us by email.

For questions regarding course material, we encourage you to use the Module Forum on Moodle. These will be answered quicker than emails.

LAB

IAMET-406(COMP)

14:00-16:00 COMPI039/CI (Spring)/01

16:00-18:00 COMPI039/CI (Spring)/02

EDUCATION AIM

- To teach you different styles of programming.
- How to program in Haskell.
- How to program in Java.
- How to choose an appropriate programming paradigm for a particular problem.

TEXTBOOKS

Java Programming: A Comprehensive Introduction, Herbert Schildt and Dale Skrien, 2013.

Programming in Haskell (2nd Ed.), Hutton, ISBN 978-1316626221

TEACHING

- Lectures:
 - Three hours a week
 - 0900-1100 on Monday, DB-A05
 - 1300-1400 on Monday, DB-A05
- Computer Labs:
 - Two hours a week
 - group 1: 1400-1600 on Monday, IAMET-406(COMP)
 - group 2: 1600-1800 on Monday, IAMET-406(COMP)

| Module Schedule 2023-2024 Spring Semester | | | | | |
|---|---------------|-----------------|--|--|-----------------------------|
| Timetable Week | Semester Week | Week Commencing | Lecture | Lab | Convener |
| 24 | 1 | 19-Feb-24 | Module Overview Introduction to Java Programming Java Fundamentals | Java Runtime Environment Setup Basic Java Operations, Conditional Statements, Loop Statements | Ning Xue |
| 25 | 2 | 26-Feb-24 | Object-Oriented Programming | Classes, Constructors, Inner classes, Arrays,ArrayList | Ning Xue |
| 26 | 3 | 4-Mar-24 | Java: I/O and Exceptions | Read from files,Write to files, Exception handling. Introduction to coursework 1 | Ning Xue |
| 27 | 4 | 11-Mar-24 | Java: Inheritance and Interfaces | Abstract classes, Interfaces, Overloading, Overriding | Ning Xue |
| 28 | 5 | 18-Mar-24 | Java Packages | Write packages, import packages | Ning Xue |
| 29 | 6 | 25-Mar-24 | Introduction to Programming Paradigms Haskell: Introduction & First Steps | Haskell Installation GHCi, Function Applications | Wooi Ping Cheah |
| 30 | 7 | 1-Apr-24 | Haskell: Types and Classes Defining Functions | Currying, Guarded Expression, Pattern Matching, Lambda Expression | Wooi Ping Cheah |
| 31 | 8 | 8-Apr-24 | Haskell: List Comprehension Recursive Functions | Defining functions (including recursive functions) using list comprehension | Wooi Ping Cheah |
| 32 | 9 | 15-Apr-24 | Haskell: Higher-Order Functions Countdown Example | Data Declaration and Structures | Wooi Ping Cheah |
| 33 | 10 | 22-Apr-24 | Haskell: Interactive Programming Lazy Evaluation | Haskell I/O and Lazy Evaluation | Wooi Ping Cheah |
| 34 | 11 | 29-Apr-24 | Revision | No Labs | Ning Xue Wooi Ping Cheah |

ASSESSMENT

- 75% final exam
 - 2.5 hour written exam; 4 questions
- 25% coursework
 - Java coursework 1: 10%
 - Joint Java/Haskell coursework 2: 15%

RESOURCES

All lecture notes, solutions and recordings will be available via Moodle