Course Outline

COMP3161 / COMP9161
Concepts of Programming Languages
Teaching Period 2 2010

Contents

- Course Staff
- Course Details
- Course Summary
- Course Aims
- Student Learning Outcomes
- Assumed Knowledge
- Teaching Strategies
- Assessment
- Academic Honesty and Plagiarism
- Course Schedule
- Resources for Students
- Course Evaluation and Development

Course Staff

Contact Details

Staff Name	Role	Email	Phone
Gabi Keller	Course Convenor	keller at cse.unsw.edu.au	56032

Consultations

Staff Name	Day/Time	Location
Gabi Keller	Wednesday 1400-1600	K17-501 (please contact me via email beforehand)

Course Details

Course Code: COMP3161 / COMP9161

Course Title: Concepts of Programming Languages

Units of Credit: 6

Course WebSite: http://www.cse.unsw.edu.au/~cs3161/

Handbook Entry: http://www.handbook.unsw.edu.au/undergraduate/courses/2010/COMP3161.html

Course Summary

This course discusses and relates a range of programming language concepts and paradigms, including imperative, object-oriented, functional, concurrent & parallel programming. It covers the theoretical foundations (syntax, operatational, axiomatic and denotational semantics) as well as practical development and implementation aspects (dynamic and strong typing, polymorphism, overloading, automatic memory management, and multicore parallelism).

Due to the course topic, a variety of programming languages will be studied and used. Assignments will be in the programming language Haskell, but no previous knowledge of Haskell is assumed.

Course Aims

This course aims to ...

Student Learning Outcomes

After completing this course, students will:

- know certain things ...
- be able to do other things ...

This course contributes to the development of the following graduate capabilities:

Graduate Capability	Acquired in
scholarship: understanding of their discipline in its interdisciplinary context	?
scholarship: capable of independent and collaborative enquiry	?
scholarship: rigorous in their analysis, critique, and reflection	?
scholarship: able to apply their knowledge and skills to solving problems	?
scholarship: ethical practitioners	?
scholarship: capable of effective communication	?
scholarship: information literate	?
scholarship: digitally literate	?
leadership: enterprising, innovative and creative	?
leadership: capable of initiating as well as embracing change	?
leadership: collaborative team workers	?
professionalism: capable of independent, self-directed practice	?
professionalism: capable of lifelong learning	?
professionalism: capable of operating within an agreed Code of Practice	?
global citizens: capable of applying their discipline in local, national and international contexts	?
global citizens: culturally aware and capable of respecting diversity and acting in socially just/responsible ways	?
global citizens: capable of environmental responsibility	?

Assumed Knowledge

Before commencing this course, students should:

- know certain things ...
- be able to do other things ...

These are assumed to have been acquired in the courses ...

Teaching Strategies

- Lectures ... introduce concepts, show examples
- Tutorials ... reinforce concepts and provide additional examples
- Lab Work ... introduce technology required for the assignments
- Assignments .. allow students to solve significant problems

Assessment

Details of assessment items ...

Or, if you're using the WebCMS GradeBook, simply use the [Assessment] tag.

Academic Honesty and Plagiarism

Plagiarism is defined as "using the words or ideas of others and presenting them as your own". UNSW and CSE treat plagiarism as academic misconduct, which means that it carries penalties as severe as being excluded from further study at UNSW. There are several on-line sources to help you understand what plagiarism is and how it is dealt with at UNSW:

- Learning Centre: Plagiarism and Academic Integrity
- MyUNSW: Plagiarism and Academic Misconduct
- CSE: Addendum to UNSW Plagiarism Guidelines
- CSE: Yellow Form (whose terms you have agreed to)

Make sure that you read and understand these. Ignorance is not accepted as an excuse for plagiarism.

Course Schedule

No schedule is available (yet)

Resources for Students

The textbook for the course is:

- Types and Programming Languages by Benjamin C. Pierce, MIT Press.

A tutorial and reference for Haskell is:

- Real World Haskell by Bryan O'Sullivan, Don Stewart, and John Goerzen, O'Reilly Media.

Further reading material will be announced on the course web page.

Course Evaluation and Development

This course is being continously improved and we will conduct a survey at the end of session to obtain feedback on the quality of the various course components. Your participation in the survey will be greatly appreciated.

The CATEI evaluation from the last several offerings of this course showed that students were generally satisfied with all aspects of the course. Thus we intend to maintain the same style and structure for the up-coming offering. The course content changed two years ago to include a stronger focus on concurrent and parallel programming, as we recognise the importance of current and emerging multicore architectures. We will continue to elaborate and polish this new material this semester.