



The University of Southern Queensland

## Course specification

The current and official versions of the course specifications are available on the web at <http://www.usq.edu.au/coursespecification/current>.  
Please consult the web for updates that may occur during the year.

### Description: Comparative Programming Languages

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
CSC	3403	86222	1, 2009	ONC	1.00	Toowoomba

<b>Academic group:</b>	FOSCI
<b>Academic org:</b>	FOS003
<b>Student contribution band:</b>	2
<b>ASCED code:</b>	020101

### STAFFING

Examiner: Richard Watson  
Moderator: Stijn Dekeyser

### REQUISITES

Pre-requisite: CSC2401 or USQIT16 or Students must be enrolled in one of the following Programs: MCOP or MPIT or GCEN or GDET or METC

### RATIONALE

Programming languages are the basic means of communication between humans and computers. The number of available programming languages is large and it continues to increase. However, programming languages are more alike than different. In order to learn and grasp new languages with minimum time and effort, computing professionals need to know the basic structure, the semantics and the basic elements that are common in all programming languages. They also need to understand the design principles of various programming languages and be familiar with the similarities and differences of programming languages. This course provides such understanding and knowledge.

### SYNOPSIS

This course addresses the basic principles of programming languages. It emphasizes the structure and the semantics of programming languages. It covers the major elements of languages such as types, objects, names, scopes, expressions, functions, procedures, parameters and control structures. Run-time storage management is also covered in detail. Students will gain a deep understanding of semantics of programming languages as well as their implementation.

### OBJECTIVES

On successful completion of this course students will be able to:

1. provide an introduction to the formal description of programming language syntax and semantics; (Assignment 1, Examination)

2. study the features of programming languages, with a particular focus on imperative language features; (Assignment 3, Examination)
3. study and compare different language paradigms, with a particular emphasis on functional programming languages. (Assignments 2 & 3, Examination)

## TOPICS

Description	Weighting (%)
1. Language Evolution and Evaluation	5.00
2. Formal Description of Languages	15.00
3. Variables and Data types	15.00
4. Expressions and Statements	8.00
5. Subprogram Design and Implementation	20.00
6. Functional Languages	25.00
7. Abstract Data Types	4.00
8. Exceptions	4.00
9. Other Paradigms	4.00

## TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

Introductory Book 2008, *Course CSC3403 Comparative Programming Languages*, USQ Distance and e-Learning Centre, Toowoomba.

Laboratory Manual 2008, *Course CSC3403 Comparative Programming Languages*, USQ Distance and e-Learning Centre, Toowoomba.

Sebasta, R.W 2008, *Concepts of Programming Languages*, 8th edn, Addison-Wesley, Boston, Mass.

## REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

Students are not required to read or purchase these books. Study of these books could increase a student's understanding of the Haskell language, and improve their chances of gaining a higher grade in this course.

Bird, Richard 1998, *Introduction to Functional Programming using Haskell*, 2nd edn, Prentice Hall, London.

Davie, Antony J.T. 1992, *An Introduction to Functional Programming Systems using Haskell*, Cambridge University Press, Cambridge.

Thompson, Simon 1999, *Haskell: The Craft of Functional Programming*, 2nd edn, Addison-Wesley, Harlow.

## STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Examinations	2.00
Lectures	32.00
Private Study	114.00
Tutorials	22.00

## ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT 1	10.00	10.00	22 Mar 2009
ASSIGNMENT 2	10.00	10.00	10 May 2009
ASSIGNMENT 3	15.00	15.00	07 Jun 2009
2HR CLOSED EXAMINATION	100.00	65.00	END S1 (see note 1)

### NOTES

1. Examination dates will be available during the semester.

## IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:  
It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) scheduled for them, and to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.
- 2 Requirements for students to complete each assessment item satisfactorily:  
To complete each of the assessment items satisfactorily, students must obtain at least 50% of the marks available for each assessment item.
- 3 Penalties for late submission of required work:  
If students submit assignments after the due date without prior approval then a penalty of 5% of the total marks gained by the student for the assignment will apply for each day late.
- 4 Requirements for student to be awarded a passing grade in the course:  
To be assured of receiving a passing grade a student must achieve at least 50% of the total weighted marks available for the course.
- 5 Method used to combine assessment results to attain final grade:  
The final grades for students will be assigned on the basis of the weighted aggregate of the marks obtained for each of the summative assessment items in the course.
- 6 Examination information:

In a Closed Examination, candidates are allowed to bring only writing and drawing instruments into the examination.

- 7 Examination period when Deferred/Supplementary examinations will be held:  
Any Deferred or Supplementary examinations for this course will be held during the next examination period.
- 8 University Regulations:  
Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL <http://www.usq.edu.au/corporateservices/calendar/part5.htm> or in the current USQ Handbook.

### **ASSESSMENT NOTES**

- 9 The due date for an assignment is the date by which a student must despatch the assignment to the USQ. The onus is on the student to provide proof of the despatch date, if requested by the Examiner.
- 10 Students may be required to provide a copy of assignments submitted for assessment purposes. Such copies should be despatched to the USQ within 24 hours of receipt of a request to do so.

### **OTHER REQUIREMENTS**

- 1 It is recommended that students join the course mailing list so that they can be kept informed of course-related activities and administration. Instructions on how to join the mailing list are found on the course Webpage at <http://www.sci.usq.edu.au/courses/csc3403>
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