COMP90041 Programming and Software Development

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus. Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 36 hours, comprising of one, 2-hour lecture and one, 1-hour lab per week Total Time Commitment: 200 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	**Subject** / **Study Period Commencement:** / **Credit Points:** SWEN20003 Object Oriented Software Development / Semester 2 / 12.50
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability
Coordinator:	Assoc Prof Rui Zhang, Dr Peter Schachte
Contact:	**Semester 1** A/Prof Rui Zhang email: **rui.zhang@unimelb.edu.au (rui.zhang%20)** **Semester 2** Dr Peter Schachte email: **schachte@unimelb.edu.au (https://mce_host/faces/htdocs/%20schachte@unimelb.edu.au)**
Subject Overview:	**AIMS** The aims for this subject is for students to develop an understanding of approaches to solving moderately complex problems with computers, and to be able to demonstrate proficiency in designing and writing programs. The programming language used is Java. **INDICATIVE CONTENT** Topics covered will include: # Java basics # Console input/output # Control flow

	# Defining classes # Using object references # Programming with arrays # Inheritance # Polymorphism and abstract classes # Exception handling # UML basics # Interfaces # Generics.
Learning Outcomes:	**INTENDED LEARNING OUTCOMES (ILO)** On completion of this subject the student is expected to: 1 Apply the concepts of object-oriented design to the solution of computational problems 2 Read and understand a Java program of small to medium complexity 3 Write a Java program of small to medium complexity, which contains a number of classes with console user interface 4 Understand basic concepts of computer science: data structures and algorithms 5 Understand the process and methods of software design and implementation using Java programming language.
Assessment:	Project assignments will be done during the semester and are requiring approximately 50-55 hours of work in total (40%). One 2-hour end-of-semester examination (60%). Intended Learning Outcomes (ILOs) 1, 2, 4 and 5 are addressed in the lectures, laboratory exercises, project assignments and the end-of-semester examination. Hurdle requirement: To pass the subject, students must obtain at least: 50% overall 20/40 in the project assignments 30/60 in the end-of-semester written examination. ILOs 2 and 3 are addressed in the laboratory exercises and project assignment.
Prescribed Texts:	None
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	On completion of this subject students should have developed the following skills: # Understand major concepts of object-oriented programming and design including classes, objects, encapsulation, inheritance and polymorphism # Design, implement and test a program for small and medium size problems in the Java programming language.
Notes:	**LEARNING AND TEACHING METHODS** The subject comprises a weekly 2 hour lecture followed and a 1 hour laboratory exercise. Weekly readings are assigned from the textbook, and weekly laboratory exercises are assigned. Additionally, a significant amount of project work is assigned. **INDICATIVE KEY LEARNING RESOURCES** At the beginning of the year, the coordinator will propose a textbook on Java programming which will be made available through University Book Shop and library. The current suggested textbook is Walter Savitch: *Absolute Java*. Pearson Education International. 4th Edition (or 5th Edition). **CAREERS / INDUSTRY LINKS** The IT industry is a large and steadily growing industry. Programming skills are essential for working in the IT industry, for example in software development companies, website development companies, telecommunication companies and game development companies. Most large companies have an IT department for managing their software or server. Programming skills are also necessary for employees in such IT departments.

Related Course(s):	Doctor of Philosophy - Engineering Graduate Diploma in Biostatistics Master of Biostatistics Master of Information Systems Master of Information Technology Master of Philosophy - Engineering Master of Science (Bioinformatics)
Related Majors/Minors/ Specialisations:	Computer Science Computer Science MIT Computing Specialisation MIT Distributed Computing Specialisation MIT Health Specialisation MIT Spatial Specialisation Master of Engineering (Mechatronics) Master of Engineering (Software with Business) Master of Engineering (Software)