Unit Outline

Programming Paradigms (CITS3242)

6 points / Semester 1
Location: UWA (Crawley)

Handbook Description

This unit explores and compares the main alternative paradigms for high-level programming. It considers important modern paradigms such as functional programming, logic programming and concurrent programming, and compares these with the mainstream paradigms of imperative programming and object-oriented programming. It considers past and future trends in programming paradigms and explores the motivation for each paradigm, the concepts which define it, and how each paradigm can be used in practice to complete programming tasks. It also compares the advantages of each paradigm in the software production process, with particular emphasis on productivity, scalability, program behaviour, and the correctness of programs. The unit focuses on both fundamental concepts and practical software development, with the former enabling the latter.

Prerequisites: CITS2200 Data Structures and Algorithms
Corequisites:

Unit Aims

Students gain an understanding and appreciation of the principles and practices of the main alternative paradigms for programming, as well as the ability to construct programs in each of the paradigms studied; a broad appreciation of the wide variety of possible paradigms, both present and future, resulting in the ability to choose an appropriate paradigm for a particular task; and a deeper and more sophisticated understanding of programming that allows them to make better use of mainstream paradigms as well as alternative ones.

Teaching Staff

Unit Co-ordinator:

Textbook
Contact Hours

55 (lectures: 26 hours; tutorials: 5 hours; labs: 24 hours)

Assessment

A final examination and a programming project assess knowledge of the main concepts of the paradigms, the ability to program in each paradigm, and related problem-solving abilities. The ability to work effectively in a team is developed in the programming project. Supplementary assessment is not available in this unit except in the case of a bachelor’s pass degree student who has obtained a mark of 45 to 49 and is currently enrolled in this unit, and it is the only remaining unit that the student must pass in order to complete the course.

Unsatisfactory Progress

Any student who does not demonstrate satisfactory progress in this unit, as defined in the FECM Policy on Assessment Practices and Procedures, may be refused admission to the final examinations. The final deadline for notification of unsatisfactory progress is the last day of Week 10.

Penalties

The School of Computer Science and Software Engineering has adopted a policy on minimum penalties for late items of assessment. This is the default policy of all units unless indicated otherwise, in writing, by the specific unit coordinator.

This policy shall apply to all items of continuous assessment, whether submitted either physically or electronically. Immediately after the submission deadline for an item of continuous assessment, a penalty of 20 percent will be applied PER DAY or PART THEREOF. The minimum mark possible for late submission is zero. The percentage is based on the item’s total contribution to the unit’s assessment. For example, a project contributing 40% to the unit’s assessment will incur a penalty of 8 marks for each day late until it is submitted or a mark of zero results.

A more detailed description is given in this School’s Policy on Late Submission. The Faculty does have an appeals procedure, the details of which can be found at the Policy for Appeals.

Plagiarism

Plagiarism is broadly defined to be when any portion of the work presented for assessment, can be attributed to another
party. The student making the submission should acknowledge what aspects of the presented work is not directly derived by them. For the purposes of plagiarism it is irrelevant that you have been given permission by someone to copy their work and present it as your own.

You are directed to the School of Computer Science and Software Engineering Policy on Plagiarism and the Faculty of Engineering, Computing and Mathematics Policy on Plagiarism.

**Academic Conduct Essentials (ACE)**

All students who have not previously been enrolled at UWA are required to complete a short compulsory online module called Academic Conduct Essentials (ACE) within the first 10 weeks of semester. ACE introduces students to essential knowledge regarding ethical scholarship, helps prepare them for the expectations of their university career and informs them of correct academic conduct.

The unit can be accessed via WebCT. The final unit quiz must be completed with a mark of 80% or greater. Students may attempt the quiz as many times as they wish to gain the required pass mark. Completion of the unit will be recorded as an Ungraded Pass (UP) on students’ academic records. Non-completion (NC) within the required timeframe will also be documented on formal academic records. More information on ACE is available at ace.uwa.edu.au

**Special Consideration**

Applications for consideration, deferral of tests or exams or extensions of time for assignments on medical, personal or other grounds must be lodged with the faculty office no later than three working days after the due date for the assessment in question. This rule will apply to all students, except in exceptional circumstances.

**Faculty Marks Adjustment Policy**

Final assessment is subject to the Faculty Scaling Policy.

**Supplementary Examinations**

Supplementary examinations will be awarded in accordance with Faculty Policy on supplementary assessment.

**Student Rights**

The University’s charter of student rights is available at http://www.secretariat.uwa.edu.au/home/policies/charter

**Academic misconduct**

The University of Western Australia strongly supports teaching
and learning that promotes academic literacy and ethical scholarship for **all** students. As part of this commitment, UWA has recently developed new guidelines relating to Academic Misconduct (including plagiarism). It is also developing a range of resources for students and staff to further strengthen academic literacy and ethical scholarship at UWA. Further details are available on the Teaching and Learning website.