

WESTERN SYDNEY
UNIVERSITY



The College

PROGRAMMING DESIGN

700047/900009

2020



UNIT OUTLINE

Last amended:	February 2020
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Unit name	Programming Design
Unit number	700047/900009
Coordinator	Dr Buddhima De Silva
Session	2020.1
Handbook summary	This unit introduces students to the principles required for the effective design and development of solutions to computer program related problems. This unit has been developed to enhance a student's practical ability as well as build a solid theoretical foundation for further study in programming.
Credit point value	5 Successful completion of this unit will not be counted for academic credit in any future studies at Western Sydney University.
Prerequisite/s	N/A
Corequisite/s	N/A
Unit incompatible with and not to be counted for credit with	N/A
Assumed knowledge	The ability to create a mathematical expression for a given problem scenario. This would require knowledge of basic arithmetic, percentages and simple statistical measures.
Unit level	700047 – Level Z – Non-award preparatory unit 900009 – University Foundation Studies
Attendance requirements	Students are expected to attend at least 80% of classes. Educational research consistently demonstrates that this attendance level is associated with a high likelihood of achieving a passing grade.
Enrolment restrictions	Only students enrolled at The College can enrol in this unit.
Learning outcomes	On successful completion of this unit, students should be able to: <ol style="list-style-type: none"> 1. describe what is meant by the terms programming and structured programming 2. describe the steps involved in the program development process in solving problems 3. illustrate the steps involved in program development using IPO charts 4. explain what is meant by the term programming language 5. design an algorithm that applies structured programming techniques to solve a given problem 6. develop a set of input test data and desk-check pseudocode 7. describe what is meant by modularisation, module cohesion and coupling and parameter passing with different aspects of cohesion and coupling, and 8. design and implement a program solution using an Integrated Development Environment.

Unit content	<p>In this unit students will learn about:</p> <ul style="list-style-type: none">• introduction to program design• introduction to IPO charts, flowcharts and pseudocode algorithms• introduction to desk-checking the solution algorithm• introduction to selection control structures• introduction to repetition control structures• introduction to modularisation, cohesion and coupling, and• introduction to an integrated learning environment.
Mode of delivery	<p>This unit is taught on a face-to-face basis and includes four hours of classes per week. Students will also be required to complete some programming activities in their own time. In addition, students will be required to access vUWS regularly, in order to download tutorial questions and to check for any announcements about the unit that may be posted there.</p>
Online learning requirements	<p>Students are expected to access vUWS and check their student email account at least twice a week. Access to the unit's vUWS site is only available to students who are enrolled in the unit. Student enrolment can be cancelled for failure to meet financial obligations to the university, eg failure to pay library fines. If access is unavailable, students should contact Student Services to check enrolment.</p>
Essential requirements	<p>Essential text</p> <ul style="list-style-type: none">• Farrell, J 2018, <i>Programming logic and design, comprehensive</i>, 9th edn, Cengage Learning, Boston, USA. <p>Further resources</p> <p>For a list of additional readings, please see the unit's learning guide.</p>

ASSESSMENT ITEMS AND WEIGHTING

Assessment for this unit will be based on the following components:

Task	Weighting	Learning outcomes assessed	Mandatory task
1. Project 1 (approximately 2 hours — individual assessment)	10%	3, 5, 6	Yes
2. Class test (90 minutes closed book — individual assessment)	20%	3-6	Yes
3. Project 2 (approximately 2.5 hours — individual assessment)	20%	5-8	Yes
4. Class work (approximately 20-30 mins per class — individual assessment)	10%	1-8	Yes
5. Final examination (2 hours closed book — individual assessment)	40%	1-8	Yes
Total	100%		

For details of assessment due dates, please refer to the learning guide for this unit.

All marks will be determined in accordance with The College [Assessment Policy](#).

All assessment tasks are mandatory unless otherwise specified. Should a student fail to attempt/submit the first formal assessment task in a unit, they will be deemed to be at risk and will need to follow an intervention plan in order not to receive a Fail Non-Submission (FNS) grade. However, failure to attempt/submit all other mandatory assessment tasks will result in an immediate FNS grade for the unit.

In order to pass this unit, students must:

- attempt/submit all mandatory assessments, and
- obtain a minimum overall mark of 50%.