



COURSE OUTLINE

ICT112 Programming Fundamentals

Course Coordinator: Erica Mealy (emealy@usc.edu.au) **School:** School of Science, Technology and Engineering

2022 | Semester 1

USC Sunshine Coast
USC Moreton Bay

BLENDED
LEARNING

Most of your course is on campus but you may be able to do some components of this course online.

Online

ONLINE

You can do this course without coming onto campus.

Please go to the USC website for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

This course will show you how real-world problems can be solved in a creative and flexible way by writing simple computer programs. It presents the key concepts and skills of programming, which are an essential foundation for all kinds of scripting and programming tasks in many different application areas, such as business, science, engineering, gaming and web development.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Asynchronous learning materials including Pre-recorded concept videos and associated activity	1hr	Week 1	13 times
Tutorial/Workshop 1 – computer studio workshop	3hrs	Week 1	13 times
ONLINE			
Learning materials – Asynchronous online learning materials, including Pre-recorded concept videos and associated activity	1hr	Week 1	13 times
Tutorial/Workshop 1 – Interactive zoom tutorial	3hrs	Week 1	13 times

1.3. Course Topics

- Course overview and introduction to programming.
- Variables, calculations & Data types
- Control Flow:
 - Sequenced commands
 - Choice and selection
 - Iteration (loops)
- Abstraction and Reuse
 - designing functions
 - scope of variables
- Data collections
 - lists and strings
- Testing and debugging
- Object-oriented Python Lecture

2. What level is this course?

100 Level (Introductory)

Engaging with discipline knowledge and skills at foundational level, broad application of knowledge and skills in familiar contexts and with support. Limited or no prerequisites. Normally, associated with the first full-time study year of an undergraduate program.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES	GRADUATE QUALITIES
On successful completion of this course, you should be able to...	Completing these tasks successfully will contribute to you becoming...
1 Demonstrate knowledge of the foundation concepts of software development.	Knowledgeable
2 Use industry-standard software tools to develop software.	Empowered
3 Communicate software design through writing effective reports, design documentation and specifications.	Engaged
4 Build and evaluate solutions for simple computing problems to meet specified stakeholder needs.	Creative and critical thinker

5. Am I eligible to enrol in this course?

Refer to the [USC Glossary of terms](#) for definitions of “pre-requisites, co-requisites and anti-requisites”.

5.1. Pre-requisites

Not applicable

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

SGD203

5.4. Specific assumed prior knowledge and skills (where applicable)

Not applicable

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

6.2. Details of early feedback on progress

The first few weeks of computer workshops will include practical Python programming tasks that give instant feedback. You will then be able to ask your tutor in the workshops about ways of solving those difficulties.

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Artefact - Technical and Scientific	Individual	30%	8 Weeks	Throughout teaching period (refer to Format)	Online Assignment Submission with plagiarism check
All	2	Examination	Individual	40%	2 hours	Week 12	Online Test (Quiz)
All	3	Artefact - Technical and Scientific, and Written Piece	Individual	30%	Up to 1000 words including code	Exam Period	Online Assignment Submission with plagiarism check

All - Assessment Task 1: Computer workshops

GOAL:	Each week you will be given some online exercises to complete, to learn basic programming and problem-solving concepts. You will develop small computer programs to solve problems in a creative way. This task will help to build your knowledge of basic programming skills and problem-solving techniques.		
PRODUCT:	Artefact - Technical and Scientific		
FORMAT:	One online submission per week during weeks 2 to 9. A variety of assessments methods will be used, including online achievements, peer assessment, and tutor marking. Further details will be available on the learning management system in the assignment specification each week.		
CRITERIA:	No.		Learning Outcome assessed
	1	Insightful analysis of the given problem	1 4
	2	Creative approaches to solving the problem	1 4
	3	Application of relevant programming concepts	1 2
	4	Correctness of the program output	4

All - Assessment Task 2: Examination

GOAL:	The purpose of this task is to obtain a comprehensive view of software development in terms of definitions and concepts, techniques, and producing software driven solutions to business problems.		
PRODUCT:	Examination		
FORMAT:	This two-hour examination will consist of a set of questions to test understanding and application of concepts. This is an individual assessment.		
CRITERIA:	No.		Learning Outcome assessed
	1	Comprehend, apply and communicate definitions and concepts used in software development	1
	2	Comprehend and present programming structures	1
	3	Design an algorithm	1

All - Assessment Task 3: Python Programming Assignment

GOAL:	To produce a Python program that effectively solves a real-world problem.	
PRODUCT:	Artefact - Technical and Scientific, and Written Piece	
FORMAT:	You will be presenting a report and algorithm design showing how you might solve a given problem using a Python program. Further details will be available on the learning management system in the assignment specification.	
CRITERIA:	No.	Learning Outcome assessed
	1	Presentation and organisation of report 2 3
	2	Insightful analysis of the given problem and creative approaches to solving the problem 1 4
	3	Application of relevant programming concepts 1
	4	Correctness of the program output 4
	5	Adherence to the recommended programming styles 2 3

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Directed study hours may vary by location. Student workload is calculated at 12.5 learning hours per one unit.

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

There are no required/recommended resources for this course.

8.2. Specific requirements

This course requires specialist software which is provided at USC campuses for student use. If you elect to do this course online, you may either; attend a campus at which it is available, discuss alternative solutions with your course coordinator that would enable you to demonstrate the learning outcomes, or if you prefer you may acquire this software (if necessary at your own expense). Some software may offer discounted or free academic licensing.

9. How are risks managed in this course?

Health and safety risks for this course have been assessed as low. It is your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the [online induction training for students](#), and following the instructions of the University staff.

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:

The final mark is in the percentage range 47% to 49.4%

The course is graded using the Standard Grading scale

You have not failed an assessment task in the course due to academic misconduct

10.3. Assessment: Submission penalties

Late submission of assessment tasks may be penalised at the following maximum rate:

- 5% (of the assessment task's identified value) per day for the first two days from the date identified as the due date for the assessment task.

- 10% (of the assessment task's identified value) for the third day - 20% (of the assessment task's identified value) for the fourth day and subsequent days up to and including seven days from the date identified as the due date for the assessment task.

- A result of zero is awarded for an assessment task submitted after seven days from the date identified as the due date for the assessment task. Weekdays and weekends are included in the calculation of days late. To request an extension you must contact your course coordinator to negotiate an outcome.

10.4. SafeUSC

USC is committed to a culture of respect and providing a safe and supportive environment for all members of our community. For immediate assistance on campus contact SafeUSC by phone: [07 5430 1168](tel:0754301168) or using the [SafeZone](#) app. For general enquires contact the SafeUSC team by phone [07 5456 3864](tel:0754563864) or email safe@usc.edu.au.

The SafeUSC Specialist Service is a Student Wellbeing service that provides free and confidential support to students who may have experienced or observed behaviour that could cause fear, offence or trauma. To contact the service call [07 5430 1226](tel:0754301226) or email studentwellbeing@usc.edu.au.

10.5. Study help

For help with course-specific advice, for example what information to include in your assessment, you should first contact your tutor, then your course coordinator, if needed.

If you require additional assistance, the Learning Advisers are trained professionals who are ready to help you develop a wide range of academic skills. Visit the [Learning Advisers](#) web page for more information, or contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au.

10.6. Wellbeing Services

Student Wellbeing provide free and confidential counselling on a wide range of personal, academic, social and psychological matters, to foster positive mental health and wellbeing for your academic success.

To book a confidential appointment go to [Student Hub](#), email studentwellbeing@usc.edu.au or call 07 5430 1226.

10.7. AccessAbility Services

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, learning disorder mental health issue, injury or illness, or you are a primary carer for someone with a disability or who is considered frail and aged, [AccessAbility Services](#) can provide access to appropriate reasonable adjustments and practical advice about the support and facilities available to you throughout the University.

To book a confidential appointment go to [Student Hub](#), email AccessAbility@usc.edu.au or call 07 5430 2890.

10.8. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Administration of Central Examinations
- Deferred Examinations
- Student Academic Misconduct
- Students with a Disability

Visit the USC website: <https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching>

10.9. Student Charter

USC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The [Student Charter](#) sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

10.10.General Enquiries

In person:

- **USC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **USC Moreton Bay** - Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **USC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **USC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **USC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **USC Caboolture** - Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au