

Course unit title:	Programming Principles II
Course unit code:	CSC132
Type of course unit: (Compulsory/optional)	Compulsory
Level of course unit: (First, second or third cycle)	Bachelor (1st cycle)
Year of study:	1
Semester when the unit is delivered:	2
Number of ECTS credits allocated:	6
Name of lecturer(s):	TBA
Learning outcomes of the course unit:	
<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none"> • Define objects with constructors and set/get methods • Design super/base classes and sub/derived classes with class relationships • Create abstract classes and interfaces • Create basic GUI components and handle events (if applicable) • Apply operator overloading (if applicable) • Apply error checking techniques • Implement sequential and random access files • Use string manipulation methods 	
Mode of delivery:	Face-to-face
Prerequisites and co-requisites:	<ul style="list-style-type: none"> - CSC131 - CSC130 for BCSC (could be co-requisite)
Recommended optional program components:	None

Course contents:

Objective:

To introduce the concept of object oriented programming. As part of the course advanced features of an object oriented programming language will be studied. By the end of the course students will gain experience in writing object-oriented programs, through the course work.

Description:

Objects:

Introduction to objects and object oriented design, classes, constructors, overloaded constructors, set and get methods, composition, constants and class-wide variables, class scope, data abstraction and encapsulation.

Inheritance and Polymorphism:

Super/base classes, sub/derived classes, inheritance, polymorphism, dynamic binding, abstract classes and methods, final methods and classes, interfaces.

Friends, overloading (if applicable)

Friend functions and friend classes, Operator overloading, arrays and classes

GUI (if applicable):

Introduction to GUI design, apply basic GUI components such as labels, text boxes, combo boxes, buttons, radio buttons, check boxes.

Events (if applicable):

Event handling, inner classes, nested classes, event handlers and event listeners.

Exception Handling:

Error checking techniques and exception handling, throwing and catching an exception

Files:

What a file is, streams, sequential and random access files, storing objects in files file classes, input and output methods/functions for files

**Recommended
or
required reading:**

Deitel P., Deitel H., C++ How to program: Late objects, 7/e, 2011

Cheng H., C for Engineers and Scientists, an interpretive approach, McGraw-Hill, 2010

Savitch W., Problem solving with C++, 8/e, Pearson, 2012

Charatan, Q., & Kans, A., Java in two semesters McGraw-Hill

	<p>Elliot B. Koffman and Ursula Wolz, PROBLEM SOLVING WITH JAVA, Addison Wesley</p> <p>Walter Savitch, JAVA – AN INTRODUCTION TO PROBLEM SOLVING AND PROGRAMMING, Prentice Hall</p> <p>Walter Savitch, PROGRAMMING AND PROBLEM SOLVING WITH C++ - THE OBJECT OF PROGRAMMING, Addison Wesley</p>						
<p>Planned learning activities and teaching methods:</p>	<table border="0"> <tr> <td data-bbox="574 705 1024 751">Class Instruction:</td> <td data-bbox="1024 705 1261 762" style="border: 1px solid black; text-align: center;">42 Hours</td> </tr> <tr> <td data-bbox="574 762 1024 816">Consultation:</td> <td data-bbox="1024 762 1261 816" style="border: 1px solid black; text-align: center;">15 Hours</td> </tr> </table>	Class Instruction:	42 Hours	Consultation:	15 Hours		
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<p>Assessment methods and criteria:</p>	<table border="0"> <tr> <td data-bbox="574 900 1024 940">Examinations</td> <td data-bbox="1024 900 1261 940" style="border: 1px solid black; text-align: center;">75%</td> </tr> <tr> <td data-bbox="574 940 1024 1014">Class Participation / Assignments</td> <td data-bbox="1024 940 1261 1014" style="border: 1px solid black; text-align: center;">25%</td> </tr> <tr> <td></td> <td data-bbox="1024 1014 1261 1052" style="border: 1px solid black; text-align: center;">100%</td> </tr> </table>	Examinations	75%	Class Participation / Assignments	25%		100%
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	100%						
<p>Language of instruction:</p>	<p>English</p>						
<p>Work placement(s):</p>	<p>No</p>						
<p>Place of Teaching:</p>	<p>Regular Classroom European University Cyprus, Nicosia</p>						