Course unit title:	Ubiquitous Computing
Course unit code:	CSW371
Type of course unit: **(Compulsory/optional)**	Optional
Level of course unit: **(First, second or third cycle)**	Bachelor (1st cycle)
Year of study:	3 or 4
Semester when the unit is delivered:	6 or 7 or 8
Number of ECTS credits allocated:	6
Name of lecturer(s):	TBA

Learning outcomes of the course unit:

Upon successful completion of this course students should be able to:

- Recognise the core concepts of ubiquitous computing (Ubicomp).
- Recall the process of design and deployment of ubiquitous computing solutions. Illustrate this in a wide range of applications and environments
- Apply theoretical knowledge of Ubicomp systems design to develop prototype applications that address a specific goal.
- List and exemplify the key technologies involved in the development Ubicomp systems
- Identify the main design challenges of a ubiquitous computing system from both a systems viewpoint and from a human-computer interaction perspective
- Explain the technology trends that are expected to have a major impact across a wide range of application domains
- Recognise the different ways that humans will interact with systems in a ubiquitous environment and account for these accordingly

Mode of delivery:	Face-to-face
Prerequisites and co-requisites:	CSW241, CSC341
Recommended optional program components:	None

Course contents:

Objective:

The aim of this course is to introduce the student to the domain of ubiquitous computing

and examine the core technologies and methods that define the ubiquitous computing, that includes, wireless communications, contextual awareness and personalisation.

Description:
The content will consist of the following:

- Introduction to Ubiquitous computing
  Fundamentals of wireless computing, sensor-based systems and context-aware systems that adapt users' preferences.
- Applications of Sensor-based and context-aware systems
  Illustrations of the applications of contextual awareness in diverse domains such as transportation, medicine, academia, gerontology and business.
- Sensing and context awareness
  Location and identification technologies, mobility awareness, temporal awareness, spatial awareness. Definition of service architecture models. Illustrations of the underlying technology and application of wireless sensors and actuators.
- Heterogeneity
  Explain the notion of heterogeneity of ubiquitous computing infrastructures and how is tackled.
- Content delivery
  Adaptive content delivery in heterogeneous network environments
- Human interaction in ubiquitous computing environments
  Human centred design, user models, requirements elicitation for ubiquitous systems design, user interface design and evaluation, ambient display design and evaluation.

Recommended or required reading:	John Krumm, Ubiquitous Computing Fundamentals, CRC Press. , 2010 Stefan Poslad, Ubiquitous Computing: Smart Devices, Environments and Interactions, Wiley, 2009 Cuno Pfister, Getting Started with the Internet of Things: Connecting Sensors and Microcontrollers to the Cloud, O'Reilly Media, 2011
Planned learning activities and teaching methods:	Class Instruction: 42 Hours Consultation: 15 Hours
Assessment methods and criteria:	Examinations 50% Class Participation 5% Project 45% 100%

Language of instruction:	English
Work placement(s):	No
Place of Teaching:	IT Laboratory European University Cyprus, Nicosia