



MCAST

Malta College of Arts, Science & Technology

MQF Level 2

IT2-01-19
IT2-01-19G

Foundation Certificate in ICT

Course Specification

Course Description

The programme is designed to allow students with a School leaving Certificate to follow a study programme in the area of ICT. The course includes a significant amount of vocational practice that will help students form a clear idea of the nature of the trade or vocation of ICT. Students will receive a proper understanding of the basic areas that make up information and communication technology (ICT). This course is not intended to prepare the learner for immediate employment. However, it is the first in a series of programmes that will eventually prepare the learner to work within the computing industry.

Programme Learning Outcomes

At the end of the programme the learner is able to

1. *Identify the main hardware components of a computer system.*
2. *Carry out simple programming tasks using a high level language.*
3. *Use multimedia applications to present information.*
4. *Provide a solution for a given IT project.*

Entry Requirements

- Finished Compulsory Education or MCAST Introductory Certificate
- Initial Assessment Tests
- Applicants with SEC/O-level passes at Grades 6 or 7 in at least two subjects from Maltese, English Language and Mathematics or “Secondary School Certificate and Profile “ (SSC&P) at Level 1 or 2 will be exempted from the Initial Assessment Tests and will start directly at Level 2

Current Approved Programme Structure

Unit Title	ECVET
Computer Graphics	6
Programming	6
Computer Systems	6
ICT Project	6
English	6
Mathematics	6
Maltese	6
Individual Social Responsibility	6
Science & Technology	6
IT	6
Total ECVET	60

Computer Graphics

Unit level (MQF): 2

Credits : 6

Unit description

The learners will learn about two-dimensional graphics and image manipulation. Learners will be introduced to main concepts of computer graphics underlying digital image properties, image file formats and colour models. They will gain practical skills of image capturing from various sources, such as digital cameras, scanners, screen capturing, etc. as well as processing of digital images in raster graphics application. Learners will also be introduced to digital images creation and processing with vector graphics application.

Learning Outcomes

On completion of this unit learners should be able to:

1. Understand the specific terms related to computer graphics.
2. Perform image capturing using various methods.
3. Perform basic operations in raster graphics application software.
4. Performs basic operations in vector graphics application software.

Programming

Unit level (MQF): 2

Credits : 6

Unit description

The aim of this unit is to introduce learners to the basic principles of computer programming, through the use of a visual drag and drop programming environment. The learners will have the opportunity to learn and develop basic problem-solving skills, so as to effectively apply coding principles, according to the problem definition. Learners will ensure the proper use of syntax and semantics in a programming language, once the solution has been designed.

The unit will cover basic programming concepts related to the design and implementation of event-driven applications. This will comprise the use of procedures and control structures (sequence, selection, and iteration), variables, data types, operators and arrays to reach a programming solution. Learners will be able to test and debug solutions, whilst documenting the results.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Understand the principles of software design and development.*
2. *Understand the basic features of event driven programming.*
3. *Use basic data structures to create an event-driven application.*
4. *Perform testing and debugging of an event-driven application.*

Computer Systems

Unit level (MQF): 2

Credits : 6

Unit description

This unit represents the extension of Level 1 units. The aim of this unit is to provide learners with a deeper understanding and practical knowledge about computer hardware, computer network connections, operating systems and application software as well as about common computer operations.

The learners will be introduced to features, application and the practical skills in upgrading, assembling, connecting, installing and configuring of the computer components and software applications. It will provide learners with the opportunity to gain basic understanding of network connections and various methods of connecting to the Internet taking into consideration health and safety precautions at the workplace.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Practice the assembly and upgrade of an appropriate computer system.*
2. *Setup basic network interfaces and devices.*
3. *Perform operating system setup.*
4. *Perform peripheral installations.*

ICT Project

Unit level (MQF): 2

Credits : 6

Unit description

The primary aim of this unit is to teach learners how to identify and solve a simple problem using ICT skills. The learner will be able to combine the two designed units at this level; mainly Programming and Computer Graphics. The learner will analyse, develop, test and document the project using a development life cycle. This course is mainly designed to give learners experience in identifying the requirements and use what they learnt to solve the problem. The project will be individually evaluated and learners will be guided to achieve the necessary scenario content to fulfil the project requirements.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Define a suitable problem for a basic ICT project.*
2. *Propose an ICT solution for the identified problem.*
3. *Design, implement and test the proposed ICT solution.*
4. *Present the developed ICT solution and its educational findings.*