MCAST

MQF/EQF Level 3

AE3-A3-21

Diploma in Heating, Ventilation and Air Conditioning

Course Specification

Course Description

This programme of study addresses the competences required as entry level to the Building and Construction Engineering sector. The achievement of the required underpinning knowledge and key skills will be accomplished through contextualising key skills and adopting a highly practical approach.

Programme Learning Outcomes

At the end of the programme the students are able to

1. *Carry out a risk assessment of the surrounding working environment before and after executing an assigned task;*
2. *Set out and form pipe runs for small commercial installations;*
3. *Set out equipment and accessories to fit for particular situations;*
4. *Follow working procedure to ensure quality during installations, servicing and maintenance.*

Entry Requirements

MCAST Foundation Certificate

or

2 SEC/O-Level/SSC&P (Level 3) passes

Other Entry Requirements

A medical certificate for colour blindness is a necessary requirement to follow the course.

Key Information

Awarding Body – MCAST

Accreditation Status – Accredited via MCAST's Self Accreditation Process (MCAST holds Self-Accrediting Status as per 1st schedule of Legal Notice 296/2012)

Type of Programme: Qualification

MQF Level	Examples of Qualifications	'Qualification' Minimum Credits Required	'Award' Credits Required
Level 8	Doctoral Degree Third Cycle Bologna Process	NA	NA
Level 7	Masters Second Cycle Bologna Process	90-120	Less than 30
	Post-Graduate Diploma	60	
	Post-Graduate Certificate	30	
Level 6	Bachelor[23]/Bachelor (Hons.)[24] First Cycle Bologna Process	180-240	Less than 180
Level 5	Short Cycle Qualification	120	Less than 60
	Undergraduate Higher Diploma	90	
	Undergraduate Diploma	60	
	Undergraduate Certificate	30	
	VET Level 5 Programme[25]	60-120	
Level 4	Pre-Tertiary Certificate	30	Less than 120
	VET Level 4 Programme[26]	120	
	MATSEC Certificate	NA	
Level 3	VET Level 3 Programme[27]	60	Less than 60
	General and Subject Certificate	NA	
Level 2	VET Level 2 Programme[28]	60	Less than 60
	General and Subject Certificate	NA	
Level 1	VET Level 1 Programme[29]	40	Less than 40
	General and Subject Certificate	NA	
Introductory Level A	Preparatory Programme	30	Less than 30
Introductory Level B	Pre-entry Basic Skills Course	30	Less than 30

Table 1: Minimum number of credits for 'Qualifications' and parameters for 'Awards'

Fig.1: p56, Ministry for Education and Employment & National Commission for Further and Higher Education Malta (2016). *Referencing Report, 4th Edition*. NCFHE.

Total number of Hours: 1500

Mode of attendance: Fully Face-to-Face Learning

Duration: 1 Year

Target audience for MCAST full-time courses is 16 to 65+

The official language of instruction at MCAST is English. All notes and textbooks are in English (except for language courses which will be in the respective language being instructed). International candidates will be requested to meet English language certification requirements for access to the course.

This course will be offered at

MCAST has four campuses as follows:

MCAST Main Campus
Triq Kordin, Paola, Malta

All courses except for the Institute for the Creative Arts, Centre of Agriculture, Aquatics and Animal Sciences are offered here.

Institute for the Creative Arts
Mosta Campus
Misraħ Għonoq Tarġa Gap,
Mosta

Institute of Applied Sciences,
Centre of Agriculture, Aquatics and Animal Sciences,
Luqa Road, Qormi

Gozo Campus
J.F. De Chambray Street
MCAST, Għajnsielem
Gozo

Teaching, Learning and Assessment

The programmes offered are vocational in nature and entail both theoretical lectures delivered in classes as well as practical elements that are delivered in laboratories, workshops, salons, simulators as the module requirements dictate.

Each module or unit entails a number of in person and/or online contact learning hours that are delivered by the lecturer or tutor directly (See also section 'Total Learning Hours).

Access to all resources is provided to all registered students. These include study resources in paper or electronic format through the Library and Resource Centre as well as tools, software, equipment and machinery that are provided by the respective institutes depending on the requirements of the course or module.

Students may however be required to provide consumable material for use during practical sessions and projects unless these are explicitly provided by the College.

All Units of study are assessed throughout the academic year through continuous assessment using a variety of assessment tools. Coursework tasks are exclusively based on the Learning Outcomes and Grading Criteria as prescribed in the course specification. The Learning Outcomes and Grading Criteria are communicated to the Student via the coursework documentation.

The method of assessment shall reflect the Level, credit points (ECTS) and the schedule of time-tabled/non-timetabled hours of learning of each study unit. A variety of assessment instruments, not solely Time Constrained Assignments/Exams, are used to gather and interpret evidence of Student competence toward pre-established grading criteria that are aligned to the learning outcomes of each unit of the programme of study.

Grading criteria are assessed through a number of tasks, each task being assigned a number of marks. The number of grading criteria is included in the respective Programme Specification.

The distribution of marks and assessment mode depends on the nature and objectives of the unit in question.

Coursework shall normally be completed during the semester in which the Unit is delivered.

Time-constrained assignments may be held between 8 am and 8 pm during the delivery period of a Unit, or at the end of the semester in which the Unit is completed. The dates are notified and published on the Institute notice boards or through other means of communication.

Certain circumstances (such as but not limited to the Covid 19 pandemic) may lead Institutes and Centres to hold teaching and assessment remotely (online) as per MCAST QA Policy and Standard for Online Teaching, Learning and Assessment (Doc 020) available via link https://www.mcast.edu.mt/college-documents/

The Programme Regulations referenced below apply. (DOC 003 available at: link https://www.mcast.edu.mt/college-documents/)

Total Learning Hours

The total learning hours required for each unit or module are determined as follows:

Credits (ECTS)	Indicative contact hours	Total Student workload (hrs)	Self-Learning and Assessment Hours
1	5 – 10 hrs	25 hrs	20-15 hrs*
2	10 – 20 hrs	50 hrs	40-30 hrs*
3	15 – 30 hrs	75 hrs	60-45 hrs*
4	20 – 40 hrs	100 hrs	80-60 hrs*
6	30 – 60 hrs	150 Hrs	120-90 hrs*
9	45 – 90 hrs	225 hrs	180-135 hrs*
12	60 – 120 hrs	300 hrs	240-180 hrs*

* The 'Self-Learning and Assessment Hours' amount to the difference between the contact hours and total student workload.

Grading system

All MCAST programmes adopt a learner centred approach through the focus on Learning Outcomes. The assessment of MCAST programmes is criterion-referenced and thus assessors are required to assess learners' evidence against a pre-determined set of Learning Outcomes and assessment criteria.

For a student to be deemed to have successfully passed a unit, a minimum of 50% (grade D) must be achieved. In case of part time programmes, the student must achieve a minimum of 45% to successfully pass the unit.

All units are individually graded as follows:
A* (90-100)
A (80-89)
B (70-79)
C (60-69)
D (50-59)
Unsatisfactory work is graded as 'U'.

Work-based learning units are graded on a Pass/Fail basis only.

Detailed information regarding the grading system may be found in the following document: DOC 003 available at: link https://www.mcast.edu.mt/college-documents/)

Intake Dates

•MCAST opens calls for application once a year between July and August of each year for prospective applicants residing in MALTA.
•Applications to full-time courses from international students not residing in MALTA are accepted between April and Mid-August.
•For exact dates re calls for applications please follow this link https://www.mcast.edu.mt/online-applications-2/

Course Fees

MCAST course are free for Maltese and EU candidates. International candidates coming from outside the EU need to pay fees for the respective course. Course fees are set on a per-level and course duration basis. For access to course fee structure and payment methods please visit https://www.mcast.edu.mt/fee-payments-for-non-eu-candidates/.

Method of Application

Applications to full-time courses are received online via the College Management Information System. Candidates can log in using Maltese Electronic ID (eID) or European eIDAS (electronic identification and trust services) to access the system directly and create an account as the identity is verified electronically via these secure services.

Non-EU candidates need to request account creation though an online form by providing proof of identification and basic data. Once the identity is verified and the account is created the candidate may proceed with the online application according to the same instructions applicable to all other candidates.

Non-EU candidates require a study visa in order to travel to Malta and joint the course applied for. For further information re study-visa please access https://www.identitymalta.com/unit/central-visa-unit/.

For access to instructions on how to apply online please visit https://www.mcast.edu.mt/online-applications-2/

Contact details for requesting further information about future learning opportunities:

MCAST Career Guidance
Tel: 2398 7135/6
Email: career.guidance@mcast.edu.mt

Current Approved Programme Structure

Unit Code	Unit Title	ECTS	Semester
ETHVA-306-1501	HVACR Technology	6	YEAR
ETHVA-306-1502	HVACR Electric	6	YEAR
ETHVA-306-1503	Domestic Hot Water, Central Heating and Ventilation Installation Practice	6	YEAR
ETHVA-306-1504	Domestic Air Conditioning and Refrigeration Installation Practice	6	YEAR
ETHVD-306-1401	Building Drawings and Setting Out	6	YEAR
ETH&S-306-1404	Occupational Safety in the Construction Industry	6	YEAR
CDKSK-304-1921	Mathematics	4	YEAR
CDKSK-304-1922	English	4	YEAR
CDKSK-304-1923	Maltese	4	YEAR
CDKSK-304-2108	Information Technology	4	YEAR
CDKSK-304-2103	Community Social Responsibility	4	YEAR
CDKSK-304-1925	Science	4	YEAR
	Total ECTS	60	

ETHVA-306-1501: HVACR Technology

Unit level (MQF/EQF): 3
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning hours: 150

Unit Description

This programme is designed to provide knowledge in the field of heating, ventilation, air conditioning and refrigeration.

Learners will learn about the functional principles of different heating systems, including solar heating systems for various uses. They will learn about the heating devices, pumps, components and accessories, including semi or fully automated devices.

They will identify all elements of a refrigeration system and understand the working principles of refrigeration, refrigerant types and the components of refrigeration systems.

They will gain knowledge of all elements and materials of an air conditioning system as well as an understanding of the procedure and equipment necessary for the installation and testing of air conditioning units.

At the same time learners will adopt the theoretical aspect of the air conditioning principles and air parameters that are changed and controlled in HVACR systems.

Learners will gain knowledge about practical refrigeration and air conditioning principles and their practical use in the environmental control of buildings. They will learn about elements of refrigeration, air condition systems, pipes fittings, accessories, insulation, refrigeration gases and heat pumps.

Basic knowledge of ventilation systems in domestic buildings, advantages and disadvantages of different systems, ducts, ventilators and other elements of a system will be adopted during this unit. They will also learn about the types of ventilators, ducting, automation, and regulation.

Learning Outcomes

Upon successful completion of this unit, learners will be able to:

1. *Identify the components required to assemble a refrigeration system;*
2. *Select the equipment, materials and procedures required to install a domestic air-conditioning system;*
3. *Analyse the methods of connecting and setting basic system controls and determining physical parameters associated with HVACR;*
4. *Describe the types and components of ventilation systems.*

ETHVA-306-1502: HVACR Electric

Unit level (MQF/EQF): 3
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning hours: 150

Unit Description

This programme is designed to provide knowledge in the field of electrical installations that is required to complement and support HVACR systems.

Learners will learn about all electrical principles that will include all definitions, formulae, laws and regulations that are related to domestic HVACR systems.

Learners will adopt the theoretical knowledge of electrical installations and an understanding of basic computations for working safely on circuits. They will use Ohm's law and other equations for series circuits, parallel circuits, resistivity, and power.

Learners will learn about the different types of electrical circuits and different types of instruments. Practical concepts will be carried out such as measuring electrical voltage, current and resistance of various components including temperature sensors.

The program also includes technology sessions such as power distribution, cable selection, protection devices, earthing and the importance of health and safety practices

Learners will learn the basic principles of magnetic field in relationship with motors, solenoid valves and transformers. During this course, learners will gain knowledge about electrical terminations and simple circuits.

Learning Outcomes

Upon successful completion of this unit, learners will be able to:

1. *Solve theoretical problems related to DC and simple single-phase AC circuits;*
2. *Know the safety precautions one should undertake when dealing with electrical installations;*
3. *Practice different wiring techniques and testing procedures used in the distribution of electrical supply to domestic HVACR equipment.*

ETHVA-306-1503: Domestic Hot Water, Central Heating and Ventilation Installation Practice

Unit level (MQF/EQF): 3
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning hours: 150

Unit Description

Learners will gain basic skills in construction, which are no directly related to HVACR and will have the opportunity to select and use tools for specific applications. The basic skills in construction that are not directly connected to installation vocation include dealing with necessary openings, cuttings and other adjusting in construction elements like walls and slabs in order to make the installation in building.

This unit will also give learners practical knowledge and skills to install the elements of domestic hot water, central heating and ventilation systems.

The knowledge in heating systems includes covering sources, heat transfer and different types of heaters. It introduces the practice of the installation of domestic solar panels systems. Solar panels installation and maintenance will be included in practical exercises.

Learners will learn basic plumbing skills, such as cutting and making pipe joints. They will deal with the creation of simple pipework, measuring, cutting, bending and joining of pipes including an introduction to brazing techniques. They will fix pipework to wall and connect it to accessories, and install pipework insulation.

Learners' practice includes work out of the duct work systems including all component elements and fittings of ventilation in domestic buildings. They will create elements of ventilation ducts using different templates and they will use fittings, joining elements, suspended systems and fasteners.

Learners will carry out practice on the installation of axial and radial ventilators, fan cooling units and other heating emitters together with their basic routine maintenance.

Learning Outcomes

Upon successful completion of this unit, learners will be able to:

1. *Select and use basic hand tools in the construction sector;*
2. *Practice the basic types of joining systems and pipe work accessories;*
3. *Understand the domestic hot water and basic central heating systems and components;*
4. *Produce typical domestic ventilation systems.*

ETHVA-306-1504: Domestic Air Conditioning and Refrigeration Installation Practice

Unit level (MQF/EQF): 3
Credits: 4
Delivery Mode: Fully Face-to-Face Learning
Total Learning hours: 150

Unit Description

This unit provides learners with practical knowledge and skills of installing elements/units of air conditioning systems. Learners will carry out the installation and commissioning of domestic air conditioning units. They will gain the practical competence to install small air conditioning systems with a wall or ceiling mounted unit, pipe runs and external unit. They will adopt the knowledge about gauge manifold, pressure tests, vacuum tests, vacuum pump, and service cylinder of refrigerant, refrigerant balance, service tools, high pressure switch, low pressure switch, combined high/low pressure switch, and thermostat.

Learners will be engaged in servicing and maintenance of refrigeration compressors, condensers, evaporators and other accessories. They will gain practical skills in setting and installing refrigeration systems by following instructions and under supervision. They will deal with components like compressor, condenser, evaporator, expansion device, receiver, filter drier. They will practice connecting components by wiring and interconnecting pipework.

This unit includes working on the pipework systems including all component elements and fittings.

This unit covers the practical use of measuring devices of parameters that are relevant in air conditioning. Learners will understand wet and dry bulb temperatures, air stream velocity and they will learn how to use vane anemometer, and hot wire anemometer.

Learners will learn how to deal with hazards associated with refrigeration and air conditioning.

They will learn about toxicity, combustion, flammability, decomposition and pressure or refrigerants and will understand the importance of safety procedures when handling refrigerant in containers.

Learning Outcomes

Upon successful completion of this unit, learners will be able to:

1. *Set out and install the components of a refrigeration system;*
2. *Install wall mounted and ceiling cassette split system of air conditioning units;*
3. *Measure physical parameters associated with HVAC;*
4. *Work safely and handle appropriately the items directly related to HVACR.*

ETHVD-306-1401: Building Drawings and Setting Out

Unit level (MQF/EQF): 3
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning hours: 150

Unit Description

This unit develops learners' knowledge and skills in using manual drawing equipment like a drawing board, rulers, pens etc. They will learn how to draw the geometrical elements like lines, angles, parallel and orthogonal line, angle translation, circle, tangent, triangle, rectangle, polygons, ellipse, hyperbole and parabola.

Learners will adopt basic geometrical constructions, orthographic projections and sections of geometrical solids. They will learn about the three-dimensional presentation of geometrical solids and technical objects. They will practice the development of surfaces and drawing the sections and intersection of solids.

Learners will adopt the technical drawing skills by drawing different mechanical elements: welds, rivets, bolts, nuts, springs, wedges, axles, shafts, pulleys, gears etc. They will use drawing scales, specific views, details, rotated views, and specific symbols and dimensioning. They will have master the use of the drawing equipment and media and adopt technical standards and symbols.

Learners will be familiar with workshop design, specific elements, tolerances and roughness. Symbols specific for different technical fields will be learned in the purpose of making or understanding sketches.

This unit will provide learners with the knowledge and skills to understand building construction drawings in orthographic projections or working sketches, understanding of space dimension, positional settings in the selected area and comparing the built environment with the elements of the structure as shown in the drawings.

In the construction industry different drawings are used for presenting the building, crafts-work, installations, details, sections etc. Learners will have to be familiar with these presentations in order to understand and participate in engineering communication.

The use of standard modern equipment and techniques is emphasised. Learners should also gain a basic understanding of computer-aided drawing. They will learn to adjust computer settings, adopt basic commands, draw the basic geometrical elements and comprehend the modelling principle.

Learners will learn how to prepare themselves and upgrade the knowledge using literature and the Internet.

Learning Outcomes

Upon successful completion of this unit, learners will be able to:

1. *Draw the geometrical structures;*
2. *Recognise and interpret projections, sections and three-dimensional drawings;*
3. *Produce simple drawings of mechanical elements;*
4. *Produce workshop drawings and sketches.*

ETH&S-306-1404: Occupational Safety in the Construction Industry

Unit level (MQF/EQF): 3
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning hours: 150

Unit Description

This unit provides learners with the knowledge of risks that can arise in the construction process, how to evaluate and predict the necessary safety precautions to enable them to work safely, efficiently and effectively on the building site.

Learners should understand the importance of safety procedures at work to keep their health and safety and that of their colleagues, as well as third parties in the region in check.

They will demonstrate foresight and protection methods against harmful consequences in various situations, by making the right choice of appropriate personal protective equipment and the appropriate safety procedures.

Learners will gain the necessary skills for their appropriate behaviour related to the existence of danger at workplace in order to reduce health risks prior to going to work, during work and after work.

Learning Outcomes

Upon successful completion of this unit, learners will be able to:

1. *Apply principles of occupational safety and health on the construction site and in the surrounding environment;*
2. *Identify hazards and risks and assess their impact on the workplace;*
3. *Apply occupational safety procedures in a caused situation.*

CDKSK-304-1921: Mathematics

Unit level (MQF/EQF): 3
Credits: 4
Delivery Mode: Fully Face-to-Face Learning
Total Learning hours: 100

Unit Description

This unit aims to develop the mathematical knowledge and skills required to apply mathematics in real-life situations. The student should be given the opportunity to engage in problem solving by: (i) exploring different approaches to solve a given problem; (ii) using appropriate strategies and language to arrive to a solution; and (iii) checking the validity and accuracy of the solution. The interconnectivity between different areas of mathematics should be pointed out to the student, even though some areas might require different techniques and tools (including ICT tools). The use of (scientific) calculators and ICT can be integrated in the delivery of the topics listed hereunder. The student should also be helped to develop and appreciate mathematical reasoning and deductive skills by being exposed to short proofs.

By the end of this unit, the student should demonstrate readiness and competency to independently apply mathematical techniques in solving problems, and be able to communicate findings using appropriate mathematical vocabulary and rigour. These problems will involve:

(a) numerical calculations,
(b) algebraic manipulation,
(c) geometrical properties,
(d) basic statistical analysis and
(e) probabilistic techniques.

Learning Outcomes

Upon completion of this unit the student will be able to:

1. Compute further numerical calculations.
2. Construct and manipulate formulae and algebraic expressions.
3. Construct linear equations using graphical techniques.
4. Apply geometrical properties of lines, shapes and solids to find lengths, angles, areas and volumes.
5. Summarise statistical data both graphically and numerically.
6. Determine the probability of single events and of the combination of independent events.

CDKSK-304-1922: English

Unit level (MQF/EQF): 3
Credits: 4
Delivery Mode: Fully Face-to-Face Learning
Total Learning hours: 100

Unit Description

This unit is targeted at learners proceeding from a Level 2 vocational programme (therefore taking into account completion of Level 2 Key Skills English) as well as those whose entry level is directly at Level 3.

In line with the Malta Qualifications Framework for Level Descriptors, English for Diploma Programmes takes into account the learning of English in terms of knowledge, skills and competences. Knowledge seeks to assess recognition of facts, principles and general concepts in a field of work or study, while skills assess the application of that knowledge in the accomplishment of tasks by employing basic methods, materials and information. In turn, competences empower the learner by giving him/her full responsibility for their accomplishment.

At Level 3, learners are expected to have sufficient knowledge of English in order to deal with everyday situations in scenarios ranging from home, work, social and public settings. General emphasis is laid on work and public settings. In their application of this knowledge, learners are required to listen to or read a range of short texts of a technical and non-technical nature, as well as information broadcast through the popular media. General understanding as well as association of ideas and inference of meaning are expected at this level. Learners should be capable of communicating in English by discussing familiar topics or vocational topics previously exposed to.

This unit encourages learners to combine their technical knowledge with their growing knowledge of general English. They will be introduced to specialised vocabulary related to their area of vocational interest: to materials and their properties, equipment and its usage, processes, tools, devices, customer service and item servicing and general workshop/laboratory practice. In addition, learners are expected to be able to write and produce short but effective work-related memoranda, personal letters, letters of application and curriculum vitae. Writing practice will be contextualised according to the various exigencies of the various institutes.

Learning Outcomes

Upon completion of this unit the student will be able to:

1. Listen to and understand information obtained from a media source.
2. Identify and comprehend information presented textually in vocational and technical contexts.
3. Identify, comprehend, and interpret information presented visually.
4. Speak and communicate ideas effectively on a range of topics ranging from the personal to the technical/vocational.
5. Write short, work-related correspondence in the form of memoranda, letter of application and curriculum vitae.
6. Research and organise information for extended technical/vocational writing.

CDKSK-304-1923: Maltese

Unit level (MQF/EQF): 3
Credits: 4
Delivery Mode: Fully Face-to-Face Learning
Total Learning hours: 100

Daħla

L-ilsien huwa essenzjali fl-iżvilupp intellettwali, emozzjonali u soċjali ta' kull individwu. Il- Malti mhux biss jiġbor fih identità lingwistika u kulturali iżda huwa għodda ta' komunikazzjoni u interazzjoni. Permezz ta' l-Ilsien Malti l-individwu jista' jesprimi dak kollu li jħoss u jkun kreattiv fil-messaġġ li jrid iwassal filwaqt li jkun espost għal oqsma oħra ta' tagħlim. Il-Malti huwa lsien ħaj li ssawwar mill-poplu Malti u għadu qiegħed jissawwar biex jibqa' għodda ta' kreattività għal kull min jużah.

L-Għanijiet

Biex l-istudenti jiksbu din l-unità jridu juru li kapaci:

1. *Jifhmu diskors standard li wieħed juża u jiltaqa' miegħu fil-ħajja ta' kuljum, kif ukoll jifhmu suġġetti marbuta ma' ġrajjiet kurrenti u suġġetti personali u ta' interess professjonali u vokazzjonali*
2. *Jifhmu testi li jikkonsistu f'diskors użat fil-ħajja ta' kuljum u fid-dinja tax-xogħol filwaqt li jifhmu deskrizzjoni ta' avvenimenti, fehmiet u opinjonijiet permezz tal-qari.*
3. *Jaffrontaw sitwazzjonijiet f'kuntest ta' konverżazzjoni u jitkellmu fuq suġġetti li huma familjari jew ta' interess personali kif ukoll marbuta mad-dinja ta' kuljum u l-qasam tax- xogħol.*
4. *Jifformolaw testi fuq suġġetti li huma familjari għalih u ta' interess personali u vokazzjonali b'mod preċiż u relevanti f'dak li għandu x'jaqsam mal-lingwa Maltija.*
5. *Jħaddmu ħiliet varji għal skop ta' tagħlim, li jmorru lil hinn mil-lingwa.*

CDKSK-304-2108: Information Technology

Unit level (MQF/EQF): 3
Credits: 4
Delivery Mode: Fully Face-to-Face Learning
Total Learning hours: 100

Unit Description

This unit aims to develop basic computer knowledge and skills needed in real-life situations. In a supportive environment, the learner will be challenged to understand how to use various real-life applications belonging to a productivity suite with the aim of providing to our learners the necessary skills required to use common computer applications necessary during their studies. By the time learners complete this unit they will be increasingly independent users of personal computers and will have a broad understanding of how ICT can help their learning, their work, and their social life. They will have a well-developed ability to decide when and how to use ICT and will be aware of the limitations associated with this use.

Through this unit the learners will achieve a broad knowledge of ICT and will be able to use ICT to carry out several increasingly complex tasks. They will be competent in using word processing, spreadsheet, and presentation software to create, format and finish documents, workbooks and slide shows that contains various elements. Finally, this unit also introduces the use of online communities and online tools to build and maintain an online presence.

Learning Outcomes

On completion of this unit a learner will be able to:

1. *Use a word processing application to create everyday letters and documents.*
2. *Use a spreadsheet to produce accurate work outputs.*
3. *Use presentation software.*
4. *Utilise online collaboration tools.*
5. *Use internet presence management tools.*

CDKSK-304-2103: Community Social Responsibility

Unit level (MQF/EQF): 3
Credits: 4
Delivery Mode: Fully Face-to-Face Learning
Total Learning hours: 100

Unit Description

This key skill presents the opportunity for MQF level 3 learners to explore their individual self through the analysis of their core values and behavioural tendencies. This will bestow insight upon the learners, which will assist them in setting and/or recalibrating their future goals. Through the acquisition of different life skills, learners will be empowered to explore their surroundings and become more responsible towards the environment which hosts them. Delving into what constitutes responsibility towards others, the learners will be presented with the opportunity to recognise the significance of developing an adequate personal conduct. The learners will also be presented with opportunities to develop and/or hone their management and organisational skills, which in return will assist them in becoming more employable and independent. Through the completion of a compulsory community work experience, learners will recognise the benefits of self-management skills towards the acquisition of balance within one's lifestyle. The completion of the compulsory community work project will also present the ideal opportunity for the students to analyse their experience, evaluate their own performance and also generate suggestions and recommendations for future good practices.

Learning Outcomes

On completion of this unit a learner will be able to:

1. *Examine the relation between personal core values and goal setting.*
2. *Practice organisational skills to establish further independence.*
3. *Identify the practice of proper personal conduct and communication within different communities.*
4. *Evaluate the engagement in a community work experience.*

CDKSK-304-1925: Science

Unit level (MQF/EQF): 3
Credits: 4
Delivery Mode: Fully Face-to-Face Learning
Total Learning hours: 100

Unit Description

In this Level 3 key skill, learners will increase their awareness about the importance of science in our everyday life. The focus will be on natural sciences, mainly the three different areas; the living world, the physical world and the world of technology.

The focus of the living world will be on interactions between living organisms in a given environment, the dependence of animals on plants for their survival via food chains and food webs, and human life. Topics related with human life will include the position of the main body organs, anatomy and physiology of at least two organ systems, and physical health (importance of healthy food, clean water and unpolluted air; importance of balanced diet and regular exercise for physical and emotional well-being; adverse effects of drugs, alcohol and smoking; ways to avoid contamination of bacteria and viruses; role of white blood cells and misuse of antibiotics).

As part of the physical world, the learner will be more familiar with physical properties of materials, classifying objects and materials based on their physical properties, and linking the uses of objects and materials with their physical properties. Furthermore, they will enhance their knowledge on renewable and non-renewable sources of energy, using sources of energy in the immediate environment safely and economically, and energy-saving measures that can be applied at home and at work.

Related with the world of technology, the learners will discuss health and safety issues at home and in the workplace including recognising situations of risk and ways how one

can avoid accidents. Also, the learners will familiarise themselves with issues related to costs and efficiency of everyday life processes by carrying out an analysis of a particular process or task in terms of energy and efficiency.

Learners will enhance their investigative skills via a project (which includes a site visit designed specifically for different institutes) in collaboration with BirdLife Malta. During a training session, lecturers will be given teaching resources and suggestions for sites to deliver the field teaching aspect and project themes. Via this learning outcome, the learner will be empowered to take action to develop a project that addresses an environmental issue. S/he will have to analyse the data, interpret and evaluate findings and then communicate them to their colleagues. The learner should realise that everyone can do something which will make a difference and that action can take place not only at the personal level but also at other levels such as community, national and international levels. Learners should understand ecosystem services and recognise that they can be used in all careers to save time, money, resources etc. but that they need to be respected for this to be possible.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Observe and classify objects in the immediate environment*
2. *Link scientific knowledge with everyday life situations*
3. *Research local environmental issues and use problem solving skills to investigate sustainable solutions*
4. *Use scientific knowledge to improve everyday life*