



MCAST

MQF/EQF Level 3

Diploma in Construction Engineering

CE3-02-21

CE3-02-21G

Course Description

The course consists of college-based training on the various subjects related to the building and construction sector. This qualification gives the student the knowledge, understanding and skills needed in this specialist area of employment and/or enables him/her to continue his/her studies in the same, or in related vocational areas such as Construction, Civil Engineering or Building Services.

During the course the student will be introduced to the different types of technical drawings used in the construction industry. Additionally, the student will be able to apply construction drawing standards and conventions to produce sketches and professional working drawings.

Programme Learning Outcomes

At the end of the programme the students are able to

- 1. Understand the importance of health, safety and welfare in the construction industry;*
- 2. Understand the diversity of the construction industry and the contribution to society by those who work within it;*
- 3. Apply construction drawing standards and conventions;*
- 4. Describe the methods and techniques associated with pre-construction, ground works, substructure, superstructure and building services systems of low-rise domestic buildings.*

Entry Requirements

- MCAST Foundation Certificate; or
- 2 SEC/O-Level/SSC&P (Level 3) passes
Preferred: Mathematics

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 Ghonoq Targa Gap,

Mosta

Institute of Applied Sciences,

Centre of Agriculture, Aquatics and Animal Sciences,

Luqa Road, Qormi

Gozo Campus

J.F. De Chambray Street

MCAST, Ghajnsielem

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 courses 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 through 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 join 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
ETBTC-306-1401	Building Technology and Setting Out Techniques	6	1&2
ETBTC-306-1402	Building Structures	6	1&2
ETBTC-306-1403	Building Services in Construction	6	1&2
ETBSV-306-1405	Introduction to Building Quantities	6	1&2
ETDFC-306-1402	Building Drawing Techniques	6	1&2
ETH&S-306-1501	Occupational Health and Safety in the Construction Industry	6	1&2
CDKSK-304-1921	Mathematics	4	1&2
CDKSK-304-1922	English	4	1&2
CDKSK-304-1923	Maltese	4	1&2
CDKSK-304-2108	Information Technology	4	1&2
CDKSK-304-2103	Community Social Responsibility	4	1&2
CDKSK-304-1925	Science	4	1&2
Total ECTS		60	

ETBTC-306-1401: Building Technology and Setting Out Techniques

Unit level (MQF/EQF): 3

Credits: 6

Delivery Mode: Fully Face-to-Face Learning

Total Learning hours: 150

Unit Description

This unit develops learners' practical and calculating skills applying them to the typical setting out processes required in the construction work. The use of standard modern equipment and techniques will be emphasised. Learners will be able to apply practical experience working with contemporary instruments and software used in the setting out processes.

This unit will provide learners with knowledge and skills which will enable them to understand building drawings in different projections (orthographic, isometric, oblique, etc.). Learners will demonstrate an understanding of space, positioning in the area and comparing the built environment with representation of drawn elements of the structure.

Learners will use their own initiative to solve various tasks in different situations connected to the setting out process. According to the data used in the drawings, learners will develop necessary skills necessary to understand the process of planning, organize setting out and take care of the safety measures.

Learners are given a chance to demonstrate practical and mathematical skills, information technology knowledge, as well as problem solving and teamwork.

Learning Outcomes

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

1. *Read and interpret building drawings in specific situations;*
2. *Calculate the data needed for the setting out process;*
3. *Produce in a safe manner a required setting out of a building for a specified task;*
4. *Carry out fieldwork exercises to establish the contours of an area, and make adequate measurements in a safe way;*

5. *Complete team tasks in specific situations (coordinate with others; demonstrate the setting out of buildings, drainage installations and road formations).*

ETBTC-306-1402: Building Structures

Unit level (MQF/EQF): 3

Credits: 6

Delivery Mode: Fully Face-to-Face Learning

Total Learning hours: 150

Unit Description

Learners will be provided with knowledge about structural elements that are used in building construction. They will gain knowledge and ability to discuss various structural elements used in traditional systems of massive construction, as well as in contemporary skeletal systems, applied in residential houses. Legal principles and processes of making architectural projects will be emphasised to enable learners' understanding of the function and final look of residence building (and its environment). In addition, they will learn how the application of different structural elements connected to the system affects the functional layout and the final look of the building.

Learners will be able to apply theoretical knowledge in discussions about pre-construction activities in situations created by their tutors. They will be able to propose appropriate building systems with the necessary elements in all phases of construction (underground, above ground) - foundations, walls, slab structures, stairs, columns and beams. Along with the understanding of architectural planning process, they will develop their practical skills regarding the final look of the building in correct relation with the basic principles of creating houses.

Learning Outcomes

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

1. *Apply proper structural elements of construction related to the function of a building and requirements of the project;*
2. *Prepare building activities;*
3. *Be familiar and apply the methods and techniques used in building construction for residential houses.*

ETBTC-306-1403: Building Services in Construction

Unit level (MQF/EQF): 3

Credits: 6

Delivery Mode: Fully Face-to-Face Learning

Total Learning hours: 150

Unit Description

Learners will acquire the knowledge of the basic design and construction principles for standard services installations in houses. Learners will be provided with practical skills for installation and maintenance of building service installations: plumbing and drainage, electrical installations on high and low voltage, CCTV, fire alarm systems, heating, ventilation and air conditioning systems.

The main topics covered will include cold and hot water supply and distribution systems, house sanitarian systems, below ground drainage systems, electrical installations of a single phase and gas supply installations.

This unit will also provide opportunities for learners to practice their understanding of design principles and services used for the development of water supply, drainage, electrical and gas installations through technical drawings.

Learners will also be familiarised with the regulations associated with building services.

Learning Outcomes

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

1. *Understand and develop water supply and distribution house systems in accordance with the associated regulations;*
2. *Understand and develop drainage house systems in accordance with the associated regulations;*
3. *Outline electrical house systems and associated regulations;*
4. *Explain gas supply house installations and associated regulations.*

ETBSV-306-1405: Introduction to Building Quantities

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 measuring instruments, standard methods of measuring, common techniques used to price construction works, estimating and tendering processes.

This unit aims to help learners develop measurement skills, as well as to estimate the amount of work and the preparation of the project documentation related to the part “Estimate of Quantities and Cost of Work”, which is used in the contracting phase (tendering), construction phase and supervision.

In this unit, learners will explore the techniques using manual measurements with train gauges and contemporary instruments (modern ultrasound devices). In addition, learners will acquire theoretical knowledge and develop skills of price analysis and cost formation. Learners will use IT technology to develop the necessary calculations in relation to the estimate of quantities and costs of work.

Learning Outcomes

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

- 1. Apply the measuring techniques and calculate the accurate quantities of defined operations;*
- 2. Apply the common techniques used for the price analysis and the costs of construction works;*
- 3. Understand the purpose of tendering and its aims, common methods of tendering and required tendering documentation.*

ETDFC-306-1402: Building Drawing Techniques

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 knowledge of technical and architectural drawings, the equipment used for drawings, symbols and conventions for presenting materials, objects and dimension lines. Learners will be able to develop the required skills and techniques for producing technical drawings (hand and CAD drawings).

Learners will gain knowledge of the types of drawings used in the design process and construction, depending on the scale of the drawing and the purpose for which these drawings are used. The role of graphical solutions of architectural problems will be emphasised, in various practical situations and tasks supervised by experts.

Skills development for architectural drawings will be acquired through the production and presentation of drawings in accordance with the standards set for their production (using hand tools and various software, related to appropriate scale, symbols, descriptions, line thickness, fill patterns, dimension lines, etc.).

Learners will carry out the required tasks and demonstrate an understanding of the marketing mix (price, product, promotion, and place). They will be prepared for further studying and technical work in the building industry.

Learning Outcomes

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

1. *Recognise and comment on the various types of technical (or architectural) drawings which are used in the construction and architecture process;*
2. *Be familiar and select appropriate drawing accessories, equipment and material which will be used for various drawings for a specific situation;*
3. *Be familiar with and apply drawing standards, symbols and conventions to produce technical drawings.*

ETH&S-306-1501: Occupational Health and 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 completion of this unit the student 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 intellettuali, emozzjonali u soċjali ta' kull individwu. Il- Malti mhux biss jigbor fih identità lingwistika u kulturali iżda huwa għodda ta' komunikazzjoni u interazzjoni. Permezz ta' l-ilsien Malti l-individwu jista' jesprimi dak kollu li jhoss 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 juzah.

L-Għanijiet

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

- 1. Jifhmu diskors standard li wieħed juza u jiltaqa' miegħu fil-ħajja ta' kuljum, kif ukoll jifhmu suġġetti marbuta ma' grajjiet 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, fehmiel u opinjonijiet permezz tal-qari.*
- 3. Jaffrontaw sitwazzjonijiet f'kuntast ta' konverżazzjoni u jikkellmu fuq suġġetti li huma familjari jew ta' interess personali kif ukoll marbuta mad-dinja ta' kuljum u l-qasam tax- xogħol.*
- 4. Jiformolaw 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. *Jhaddmu ħiliet varji għal skop ta' taġġim, 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*