MCAST

MCAST PROGRAMMES - PUBLIC INFORMATION TEMPLATE (FULL TIME)

Institute	Institute of Engineering and Transport
Department	Electrical and Electronic Department

Programme Title	Diploma in Engineering (Electronics)				
Course Code *To be filled in by Admissions Dept.*	EE3-A02-25		**If the programme includes a WBL element, How is it accredited?**	Apprenticeship	
MQF/ EQF Level	Level 3	**Type** *(refer to Appendix 1 for Parameters)*	Qualification	**Awarding Body**	MCAST – Malta College of Arts, Science and Technology
Accreditation Status	Accredited via MCAST's Self Accreditation Process (MCAST holds Self-Accrediting Status as per 1st schedule of Legal Notice 296/2012)				
Mode of Delivery	Face to Face	**Duration** *(Academic Years or Semesters)*	1 Year	**Mode of Attendance**	Full-time
Total Number of Credits	60 credits	**Total Learning Hours** *(25 Total Learning Hours for each ECTS)*	1500 hours		
Target Audience	Ages 16 - 65	**Target Group** *(the type of learners that the educational institution anticipates joining this programme)*	Learners who have completed compulsory education.		
Programme Fees	There are no fees applicable to Maltese and other EU Nationals (as will be evidenced by their Identity Document) Fees apply for other International Applicants… for fee information and any related updates it is best to communicate with MG2i International through applyinternational@mcast.edu.mt One may consider checking about possible eligibility or otherwise for any exemption from fees by contacting the relevant section within MEYR (Floriana) – or visit the servizz.gov.mt website here				
Date of Next Student Intake	For further information regarding upcoming student intake and applications time windows for same kindly click here				
Language of Instruction	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.				
Application Method	Applications to full-time courses are received online via the College Management Information System. Applicants can log-in using Maltese Electronic ID (eID) in order to access the MCAST Admissions Portal directly and create one's own student account with the identity being verified electronically via this secure service. Non-EID applicants need to request account creation though an online form after that they confirm that their local Identification Document does not come with an EID entitlement. . Once the identity is verified and the account is created on behalf of the applicant, one may proceed with the online application according to the same				

	instructions applicable to all other applicants. For more information about how to apply online for a course at MCAST, please visit: https://mcast.edu.mt/how-to-apply-online-2/
Information for Non-EU Citizens	Non-EU candidates require a study visa in order to travel to Malta and join the course applied for (on a Full Time delivery mode). For further information re study-visa please access https://www.identitymalta.com/unit/central-visa-unit/. Further information International / TCN applicants should take note of before requesting to being considered for a programme of studies at MCAST, can be obtained through the respective FAQ found on https://mcast.edu.mt/important-information/
IMPORTANT note to Non-EU Nationals / TCNs	In instances where a TCN is applying for an MCAST programme of studies which includes Apprenticeship / Placement / Internship, it is the applicant's responsibility to check with the relevant Maltese Authority whether one would be eligible to have the necessary permits to be able to carry out the accredited Apprenticeship / Placement / Internship, success from which is expected in order to be able to successfully complete the selected programme of studies. Further information can also be obtained through the respective FAQ found on: https://mcast.edu.mt/important-information/
Address where the Programme will be Delivered	*MCAST has four campuses as follows:* **MCAST Main Campus** Triq Kordin, Paola, Malta *All courses except for courses delivered by the Institute for the Creative Arts, the Centre of Agriculture, Aquatics and Animal Sciences and the Gozo Campus are offered at the Main Campus address (above).* *Courses delivered by the Institute for the Creative Arts, the Centre of Agriculture, Aquatics and Animal Sciences, or the Gozo Campus, are offered in one of the following addresses as applicable:* **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 *In the case of courses delivered via Online Learning, students will be following the programme from their preferred location/address.* *Programmes delivered via Blended Learning, and which therefore contain both an online and a face to face component shall be delivered as follows:*

	○ Face to Face components – as per above address instructions ○ Online components – from the student's preferred address.
Course Description *(Refer to Programme Specification)*	This programme serves as an initial step for those who are interested in pursuing a career in electronics. This course is designed to provide basic theory and practice related to electronics, that are then enhanced through the work-based learning. The course consists of both key skill units and vocational units, of which mostly are carried out in the workshops and laboratories. This course provides a good foundation for future career opportunities in engineering and may also serve for progression to level 4 engineering courses.
Deskrizzjoni tal-Kors *(Refer to Programme Specification)*	Dan il-programm huwa l-ewwel stadju għal studenti li huma interessati f'karriera f'elettronika. Il-kors joffri tagħlim biex l-istudenti jifhmu t-teoriji rilevanti u jiżviluppaw il-ħiliet prattiċi meħtieġa f'dan il-qasam. Dawn il-ħiliet jiġu msaħħa bl-esperjenza tax-xogħol, fl-apprentistat. Il-kors jikkonsisti f'numru ta' suġġetti relatati mal-ħilijiet ewlenin u dawk vokazzjonali, li jiġu mgħallma ġol-workshops u l-laboratorji. Dan il-kors jipprovdi bażi tajba ghall-opportunitajiet fl-inġinerija u jista' wkoll iservi bħala progressjoni għall-korsijiet f'livell erbgħa tal-inġinerija.
Career Opportunities:	Assistant Technician, Machine Operator, Technical Operator
Entry Requirements *(Refer to Prospectus / Course Page on MCAST website)*	Internal Progression Route… Any MCAST MQF level 2 Foundation Certificate OR 2 SEC / SSC&P or equivalent with a Pass Grade / Level 3
Other Notes related to this Programme, and which are to be taken note of	-
Programme Learning Outcomes *(Refer to Programme Specification)*	At the end of the programme the students is able to 1. Work safely, efficiently and effectively in the engineering workplace. 2. Use mathematical principles related to science and engineering principles. 3. Assess the function and operation of electrical and electronic system components. 4. Identify basic PC and networking systems. 5. Maintain and troubleshoot basic electronic circuits.
Teaching, Learning and Assessment Procedures	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 pertaining to this Programme's MQF/EQF level available at: link https://www.mcast.edu.mt/college-documents/, apply.
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. All full time 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 (where applicable) are graded on a Pass/Fail basis only. Some units which follow industry standards and regulations may also be graded on a Pass/Fail basis as per programme regulations referred below. Detailed information regarding the grading system may be found in the Programme Regulations pertaining to this programme's MQF/EQF Level available at: https://www.mcast.edu.mt/college-documents/ (Refer to DOC 003, 004 and 005)

Exit Point (where and as applicable)	Where a student will not make it to the Final Certification achievable from this Programme of Studies (as per Programme Regulations), one might wish to look into Exit Point possibilities as may be applicable to this programme for studies. Further information, is available at https://www.mcast.edu.mt/college-documents/, kindly refer to *DOC 077 Procedure for the processing of Claims for Certificates at Interim Exit Points.*
Contact details for Further Learning Opportunities	The MCAST Career Guidance Team, offers the service of qualified and experienced Career Advisers who will be very willing to discuss with potential applicants the course which best achieves one's career ambitions, as well as exploring one's education route, or similar. **MCAST Career Guidance** Tel: 2398 7135/6 Email: career.guidance@mcast.edu.mt
Regulatory Body/ Competent Authority Contact Details *(where applicable - in the case of a programme leading to Regulated Profession)*	Not Applicable

Programme Structure	Unit Code	Unit Title	ECTS	Year	Semester
	ETELX-305-2301	Electronics Circuits Design	5	1	Year
	ETELX-305-2302	Interpreting and Using Engineering Documentation	5	1	Year
	ETELX-306-1402	Electronic Components and Devices	6	1	Year
	ETELX-306-1403	Operating and Basic Troubleshooting of Electronic Systems	6	1	Year
	ETELE-303-2304	Health and Safety	3	1	Year
	ETELX-305-2303	Configuration of PC Systems	5	1	Year
	ETWBL-306-2308	Work-Based Learning in Engineering	6	1	2
	CDKSK-304-2313	English	4	1	Year
	CDKSK-304-2314	Mathematics	4	1	Year
	CDKSK-304-2315	Il-Malti	4	1	Year
	CDKSK-304-2501	Community Social Responsibility	4	1	Year
	CDKSK-304-2317	Science and Technology	4	1	Year
	CDKSK-304-2316	Information Technology	4	1	Year

Allocation of Total Learning Hours (per Unit)	The total learning hours required for each unit or module are determined as follows:			
	Credits (ECTS)	**Indicative contact hours[1]**	**Self-Learning and Assessment Hours[3]**	**Total Student workload (hrs)[2]**
	1	5 – 10 hrs	20 - 15 hrs*	25 hrs
	2	10 – 20 hrs	40 - 30 hrs*	50 hrs
	3	15 – 30 hrs	60 - 45 hrs*	75 hrs
	4	20 – 40 hrs	80 - 60 hrs*	100 hrs
	6	30 – 60 hrs	120 - 90 hrs*	150 Hrs
	9	45 – 90 hrs	180 - 135 hrs*	225 hrs
	12	60 – 120 hrs	240 - 180 hrs*	300 hrs
	Note: The 'Self-Learning and Assessment Hours[3]' amount to the difference between the 'Indicative Contact Hours'[1] and the 'Total Student Workload'[2]			

APPENDIX 1

MINIMUM CREDITS FOR QUALIFICATIONS AT DIFFERENT LEVELS

MQF Level	Minimum ECTS Required for a Qualification*
8	
7	30
6	180
5	30
4	30
3	60
2	60
1	40

* Programmes assigned fewer ECTS than indicated will be classified as Awards.

Reference: Fig.1: p48, Malta Further and Higher Education Authority (MFHEA) (October 2024). Referencing Report, 5th Revised Edition.

APPENDIX 2

EXAMPLES OF QUALIFICATION TYPES AT A SPECIFIC MQF LEVEL

MQF Level	Examples of qualification types at a specific MQF level (The list in this column is not exhaustive)	Number of ECTS *
8	Doctoral Programmes:	
	PhD	N/A
	Professional Doctorate	180
7	Master's Degree	90
	Postgraduate Diploma	60
	Postgraduate Certificate	30
6	Bachelor's Degree	180
	Bachelor's Honours	240
5	Undergraduate Higher Diploma	90
	Undergraduate Diploma	60
	Undergraduate Certificate	30
	VET Level 5	60
4	Advanced Diploma	120
	Pre-Tertiary Certificate	30 - 60
	MATSEC Matriculation Certificate (Advanced and Intermediate)	N/A
	VET Level 4	120
3	Certificate	60
	MATSEC Secondary Education Certificate	N/A
	VET Level 3	60
2	Foundation Certificate	60
	MATSEC Secondary Education Certificate	N/A
	VET Level 2	60
1	Introductory Certificate	40
	VET Level 1	40

* Programmes assigned fewer ECTS than indicated will be classified as Awards.

Reference: Fig.2: p48, Malta Further and Higher Education Authority (MFHEA) (October 2024). Referencing Report, 5th Revised Edition.

ETELX-305-2301: Electronic Circuits Design

Unit Level (MQF/EQF): 3
Credits: 5
Delivery Mode: Face-to-Face Learning
Total Learning Hours: 125

Unit Description

This unit will provide learners with the skills and theory required for selecting electronic devices and designing simple circuits. Such skills and knowledge are a requirement in the vocational domain of an electronics technician.

The unit builds up the learner's competence in simple circuit schematics and design by providing sufficient understanding of the fundamental principles of selecting electronic devices to meet given specifications. Learners will also develop the ability to design and prototype a simple electronic circuit using a variety of techniques, including desktop prototyping on breadboards.

In addition, learners will gain an understanding of the safe working practices needed when working with electronic components and circuits as well as the hazards and risks that can occur when assembling electronic circuits in a workshop or laboratory. Learners will understand the characteristics of electronic components, passive and active, up to the level of operational amplifiers, their symbolic representation in circuit schematics as well as their usage and rules of selection

The above is followed by various methods used for electronic circuits prototyping using hand designs of printed circuit boards (PCB) and simple software tools used for PCB layout design. The focus on PCB design is in relation to placing basic elements of electronic circuit such as voltage stabilizing circuitry and separating analogue from digital circuitry in order to avoid interference.

Finally, rules of wiring and shielding within the electronic device housing are explained by carefully selected examples of simple electronic devices.

Learning Outcomes

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

1. *Use safe working practices in the electronics laboratory and workshop.*
2. *Know the electronic components and their placement in circuit diagrams.*
3. *Demonstrate prototyping skills of electronic circuits, typically used in vocational engineering.*
4. *Construct circuits of moderate complexity involving use of integrated circuits and through hole components.*

ETELX-305-2302: Interpreting and Using Engineering Documentation

Unit Level (MQF/EQF): 3
Credits: 5
Delivery Mode: Face-to-Face Learning
Total Learning Hours: 125

Unit Description

This unit aims to provide learners with the knowledge and skills required to use engineering information, such as drawings and instructions, necessary to carry out vocational engineering operations, with particular focus on electronics. The ability to access and use information is probably one of the most critical basic vocational skills required in engineering.

This unit will enable learners to understand how to make effective use of information when working with documentation that consist of engineering drawings, reference tables, specifications, charts or any other medium/ means which carries information, being either printed or digital. Learners will be trained to extract information from engineering drawings and related documents in a fast and reliable way. Learners will also learn how to use drawings and related documentation to determine the work that needs to be done, carry out the work according to specifications and validate their own performance.

Learners will be using standard software tools to retrieve, process and store information within the document. Therefore, Engineering drawings accompanied with related documents, such as parts list and, replacement parts list become useful if they are readily accessible from stored data. Besides getting acquainted with the rules of storing and retrieving documentation, learners will also gain skills in organizing personal documentation.

This unit will enable learners to identify facts and generate conclusions needed to compile a report on technical concepts by using textual, graphical and table data in line with the established organizational policies and procedures for obtaining and using documentation. It is expected that learners will be able do this task with minimum supervision. They are also expected to take own responsibility for their own actions and the quality and accuracy of the work that they undertake.

Learning Outcomes

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

1. *Use standard software tools to gather information from technical documents.*
2. *Interpret different technical documents to carry out specific tasks.*
3. *Use engineering information when working on electrical and electronic tasks.*

ETELX-306-1402: Electronic Components and Devices

Unit Level (MQF/EQF): 3
Credits: 6
Delivery Mode: Face-to-Face Learning
Total Learning Hours: 150

Unit Description

Electronics devices have been shaping the modern world for over half a century with ever-growing use. One of the best examples of such a device is the smartphone which incorporates many technologies which are based on electronics such as: personal information management; communication with text, voice and video; internet navigation; games, etc. The two major uses of electronic devices are in handling signals by amplifying and switching, resulting the applications in information processing, signal processing, and communications. Mixed on a circuit board, electronic devices become part of many household and industrial systems and in contemporary days they are even becoming integral, embedded part of mechatronics systems.

This unit will provide learners with a practical introduction to basic electronic devices as well as analogue and digital electronic principles. It will provide knowledge on how diodes and transistors operate, as the two most important elements in an electronic circuit. Learners will also be exposed to the application of these devices in a higher level of integration, such as within an integrated circuit (of which the most important is the operational amplifier).

Another application follows digital functioning of circuits made of transistors as switching elements thus forming Logic gates and flip-flops. These will also be investigated both in practice and theory, through the use of truth tables. Starting from a simple demonstration circuitry on prototyping breadboard learners are going to be exposed to demonstration of computer-based circuit design and simulation software packages that will allow them to understand the first steps of building and testing analogue and digital circuits. Thus the overall aim of this unit will be to build up confidence in the designing and testing of simple electronic circuits. Many of the complex or real-world systems will be explained in block-diagram form emphasizing only the most important elements and electronics devices therein.

Learning Outcomes

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

1. *Describe the type of signals used in technical systems.*
2. *Describe the function of basic electronic components.*
3. *Construct and test different analogue electronic circuits.*
4. *Build and test different digital electronic circuits.*

ETELX-306-1403: Operation and Basic Troubleshooting of Electronic Systems

Unit Level (MQF/EQF): 3
Credits: 6
Delivery Mode: Face-to-Face Learning
Total Learning Hours: 150

Unit Description

The unit covers the function, operation and regular maintenance of a variety of electric systems, electronic circuits and equipment. The need for regular maintenance in order to ensure proper operation and long lifecycle of these systems introduces this crucial topic in vocational engineering training. As maintenance requires knowledge of functionality and internal operation principles of systems in concern, the unit provides learners with this knowledge as well. It is combined with elements of signals theory and functional block diagram presentations of systems functioning.

Learners will also learn how to use all necessary documentation, including user manuals and service documentation, datasheets of components used, followed by using tools and equipment in a safe and reliable way, necessary for carrying out any given maintenance task. A set of common fault detection procedures are used as examples to relate theoretical knowledge and practical aspects of engineering thus gaining functional skills in common fault detection procedures. Staff safety during maintenance is also considered.

At the end, learners will be able to demonstrate that they can perform inspection, fault detection, repair and regular maintenance of common electronic systems and applications such as bench power supply, motor drivers, various control circuits and alarm systems, communication modules and others met in modern electronic systems.

Learning Outcomes

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

1. *Understand practical skills and safety procedures in workshop and laboratory.*
2. *Explain the function of electronic components and devices using application in basic circuitry and simplified models.*
3. *Use common form of technical specifications and manuals in printed or digital format.*
4. *Perform simple maintenance and fault finding tasks on non-complex electronic systems.*

ETELE-303-2304: Health and Safety

Unit Level (MQF/EQF): 3
Credits: 3
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 75

Unit Description

The unit introduces effective and safe work to learners, focusing on their wellbeing, on prolonged life of tools and equipment and on economic aspects of work. The primary goal of the unit is to introduce basic working practices in engineering and potential hazards involved. The learner will be introduced to EU regulations adopted for engineering activities and for vocational training. This unit provides learners with knowledge of material and equipment handling, as well as the use of appropriate personal protective equipment (PPE), and their classification: protection of respiratory organs, skin, eye and hearing, protective clothing and ensembles. Learners will become aware of the hazards and risks associated with different engineering tasks, working environments (for example working with high voltages, and static-sensitive devices), use of tools and equipment (both common and special), and working with dangerous materials and substances. The unit covers ways of avoiding hazards and ways to respond correctly and swiftly in case of an incident both in theory and in practice. It is important to emphasize that this represents useful knowledge that could be applied in everyday life. Since completing a job might require team effort, this unit builds team spirit as well by delivering related communication skills. Finally, the unit will introduce some important soft skills in applying knowledge and in continued learning needed for successful professional in engineering.

Learning Outcomes

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

1. *Interpret the basics of occupational health and safety*
2. *Identify a safe working environment whilst using Personal Protective Equipment (PPE) appropriately*
3. *Carry out an engineering task according to safety standards.*

ETELX-305-2303: Configuration of PC Systems

Unit Level (MQF/EQF): 3
Credits: 5
Delivery Mode: Face-to-Face Learning
Total Learning Hours: 125

Unit Description

Through this unit learners are introduced to computer technology usage and maintenance. Besides standard PC desktop computers Learners will also receive knowledge on smartphones and tablets. Learners will also learn on how PC hardware is organized and assembled and will become aware of the basic software needed to install, run application programs and network variety of computer hardware within home or small business environment. Based on this information, learners will be exposed to all major components of the PC system that can be considered as stand-alone modules. These are: PC power supply, motherboards, microprocessors and memory devices. Apart from their function, the current specifications will be covered in particular detail to enable learners to create a configuration that satisfies a given need. Function, connectivity and configuring of common peripherals, like displays, printers and human interfaces, are covered by the unit as well. OS basics and comparison of common OS-s, Windows, Android and iOS are also part of this unit with the practical sessions focusing on learners performing installation and configuration of operating systems. Learners will be also trained in setting up and customising basic office tools such as word processors, Internet browsers and compression software, with the emphasis on functionality and interconnectivity. Learners will be able to quickly detect causes of typical problems in connectivity, operating system (OS) and office tools functioning.

Learning Outcomes

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

1. *Apply basic knowledge of computer systems and components to perform effective maintenance.*
2. *Install and configure computer hardware components.*
3. *Install and configure common operating systems for communication and basic service software packages.*
4. *Configure computer systems as optimal to task specification.*

CDKSK-304-2313: 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 as well as those whose entry level is directly at Level 3. It therefore takes into consideration both learners who have successfully passed their L2 English unit as well as those who have sat for, or are resitting, their SEC English Language (Y11).

At Level 3, learners are expected to have an intermediate knowledge of English which allows them to independently communicate on topics and scenarios related to everyday situations, these ranging from home, school, and work to social and public settings. For the purposes of bridging linguistic skills with vocational contexts, general emphasis is laid on work and public settings.

English at Level 3 encourages learners to combine their technical knowledge of their vocational subject with their growing knowledge of general English. They will be introduced to specialised vocabulary and information related to their area of vocational interest, to descriptions of materials and their properties, equipment and its usage. They will be exposed to video content and a range of short texts of a technical and non-technical nature, as well as learn how to conduct basic research to produce short but effective work or discipline-specific documents. A fuller understanding of spoken and written English as well as proper association of ideas are also expected at this level.

Learning Outcomes

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

1. *Retrieve and interpret information obtained from spoken conversation, a presentation, or a media source.*
2. *Communicate information and ideas verbally on a range of topics, ranging from the vocational to the discipline-specific.*
3. *Retrieve and interpret information present in vocational or discipline-specific texts.*
4. *Show how ideas, whether complementary or contrasting, are to be organised and presented.*
5. *Write short work-related texts, observing format, tone, and style.*
6. *Write longer vocation or discipline-specific texts based on researched information.*

CDKSK-304-2314: 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 help students understand key mathematical concepts and gain the necessary skills, to be able to use mathematics as a problem-solving and a communication tool in their everyday life and the vocational area they are studying. This unit comprises of three main components: a compulsory component, an elective component and a compulsory final project.

The compulsory component includes one compulsory learning outcome whose mathematical content and respective criteria are key in everyday life and across all vocational areas. On the other hand, the elective component is made up of a set of elective learning outcomes which include mathematical content and respective criteria whose relevance varies across different vocational areas. Consequently, every Institute can select the learning outcomes (50 marks) whose content and criteria will help students in the particular vocational area.

Moreover, this unit will give students the opportunity to use mathematics in a project related to the vocational area they are studying. Consequently, students will experience the relevance of the subject at first-hand and hence engage better in their vocational studies.

Considering the importance of technology in today's world, technological tools, such as scientific calculators and computer software, will be used to assist students in their work and enhance their understanding and confidence in the subject.

By the end of this unit, students should demonstrate readiness and competency to independently apply mathematical techniques in solving problems and be able to communicate findings using appropriate vocabulary and rigor.

Core Learning Outcomes

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

1. *Compute numerical calculations involving fractions, decimals, percentages and units of measure.*
2. *Apply Mathematics in a practical way.*

Elective Learning Outcomes

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

1. *Apply basic numerical skills in personal, household and business financial contexts.*
2. *Carry out algebraic manipulations.*
3. *Use algebra and graphs to derive information from straight lines and their equation.*
4. *Work with shapes and angles.*
5. *Summarise and interpret statistical data both graphically and numerically.*

CDKSK-304-2315: Il-Malti

Il-Livell tal-Unità: (MQF/EQF): 3
L-Għadd ta' Kreditu: 4
Mod ta' Tagħlim: Preżenti
Total ta' Sigħat ta' Tagħlim: 100

Deskrizzjoni Ġenerali tal-Unità

Il-Malti huwa l-ilsien nazzjonali tal-pajjiż. Huwa l-ilsien nattiv tal-istudenti li se jkunu qed isegwu din l-unità. Għaldaqstant m'hemmx dubju dwar l-importanza li l-istudenti għandhom ikunu profiċjenti fi lsien pajjiżhom, l-ilsien li ġeneralment iridu jikkomunikaw bih, kemm fil-ħajja tagħhom ta' kuljum u b'mod speċjali fuq il-post tax-xogħol.

Din l-unità hija msejsa fuq l-erba' ħiliet prinċipali tal-lingwa: 1) il-Qari; 2) is-Smigħ; 3) il-Kitba u 4) it-Taħdit. L-għan prinċipali ta' din l-unità huwa li l-istudenti jiġu mħarrġa f'dawn l-erba' ħiliet biex jibnu fuq dak li diġà jafu u jkomplu jtejbuh. Fil-fatt, il-livell ta' din l-unità jkompli jittarraġ fuq il-livell miksub fl-unità tat-tieni livell. F'din l-unità, il-materjal kopert ikun aktar kumpless mill-materjal tal-unità preċedenti partikularment fejn jidħol vokabolarju tekniku marbut mal-qasam vokazzjonali. F'din l-unità l-istudenti huma mistennija wkoll jaħdmu b'aktar awtonomija u responsabbiltà u jkunu mħeġġa jieħdu aktar inizjattiva waħedhom.

Il-kuntest tat-tagħlim u t-tgħallim tal-erba' ħiliet huwa ġeneralment marbut mal-qasam vokazzjonali tal-istudenti. Għaldaqstant, f'din l-unità l-istudenti se jkunu preżentati prinċiparjament b'materjal bil-Malti li jinteressahom mill-qrib u li se jkompli jkabbar l-għarfien ġenerali tagħhom dwar il-qasam vokazzjonali magħżul minnhom. Temi kurrenti oħra dwar il-ħajja ta' kuljum jistgħu wkoll jiġu preżentati u mistħarrġa. It-temi mistħarrġa f'dan il-livell jitolbu aktar impenn minn dawk tat-tieni livell u l-kuntesti tat-temi jistgħu ma jkunux dejjem ta' natura familjari mal-istudenti.

Il-qari, is-smigħ, il-kitba u t-taħdit huma l-qofol tal-komunikazzjoni. Kull persuna Maltija għandha tħossha kunfidenti meta tiġi biex tikkomunika bil-Malti, kemm verbalment u kemm bil-kitba. Biex l-istudenti jtejbu l-Malti miktub tagħhom, f'din l-unità se tkun qed tingħata wkoll importanza lill-ortografija, b'enfasi fuq ir-regoli tal-grammatika. L-għan mhuwiex li l-istudenti jsiru familjari ma' listi ta' termini grammatikali jew li l-istudenti jaħdmu eżerċizzji ripetuti tal-grammatika. L-għan hu li jkunu jafu jħaddmu r-regoli tal-grammatika biex jiktbu b'Malti ortografikament tajjeb. Dan se jkun qed isir dejjem f'kuntest, b'mod partikulari f'kuntest marbut mal-qasam vokazzjonali tal-istudenti. F'din l-unità, se tkun ukoll qed tingħata importanza partikulari lid-deċiżjonijiet meħuda mill-Kunsill Nazzjonali tal-Ilsien Malti fl-2008 (Deċiżjonijiet 1) u fl-2018 (Deċiżjonijiet 2).

Il-Kisbiet mit-Tgħallim

Biex l-istudent jikseb din l-unità irid juri li kapaċi:

1. *Jidentifika t-tifsir primarju u sekondarju ta' testi moqrija aktar kumplessi.*
2. *Jagħraf il-messaġġi diretti u indiretti ta' kuntesti ta' smigħ aktar kumplessi.*
3. *Jipproduċi kitbiet b'temi tekniċi u aktar kumplessi.*
4. *Jikkomunika b'Malti tajjeb dwar suġġetti tekniċi u aktar kumplessi permezz tat-taħdit.*
5. *Japplika r-regoli tal-grammatika tajjeb għal tisħiħ fl-ortografija.*

CDKSK-304-2318: 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 an opportunity for MQF level 3 learners to work upon their analysis and evaluation capabilities, whilst working upon various employability skills. Through the compilation of a journal, the learners will be drafting a personal biography, which highlights some of their achievements and aspirations. Journal inputting will also feature the rationale and planning phases prior to the initiation of a community work experience. Additional information and descriptions related to the community work will be provided via visual and written means.

As each learner goes through this educational journey, opportunities for social interactions and practical groupwork activities will also be presented. Through these opportunities, students will further grasp the essence of teamwork and its relevance towards becoming more competitive and employable.

Following the delivery of a selected number of educational topics, some of which targeting 'The 2030 Agenda for Sustainable Development', the learners are to select a topic of preference and deliver relating information through a public speech. The contents of the speech are to be acquired through referenced research. The learners are to increase the success rate of their speech delivery through the proper structuring and compilation of a PowerPoint.

Additionally, learners will also be presented with multiple opportunities to conduct self-reviews and evaluations during assessment periods, starting from the journal, followed by the teamwork activity, and finishing with the presentation. Educators will guide the learners into practicing and understanding the importance of analysing and evaluating information and oneself, as apart from increasing one's chances for employability, this brings forth numerous opportunities for growth.

Learning Outcomes

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

1. *Organise selections of information within a journal.*
2. *Shows the ability to work in teams.*
3. *Elaborate upon a topic and/or issue in front of an audience.*
4. *Appraise the quality of one's own effort and contributions within assigned tasks.*

CDKSK-304-2317: Science and Technology

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

Unit Description

This unit enables learners to explore the role of science in a wider context. **This unit has eight elective learning outcomes, from which four must be selected by the institute.** Depending on the selection of the elective criteria, this unit enables learners to explore the role of science in a wider context. The learning outcomes will focus on the ethical issues in science and health literacy. Learners will understand the meaning of ethics and the importance of ethics in scientific research and development. They will also learn about the importance of health literacy and to understand and use information to make decisions about their health. The learners may also more familiar with the physical and chemical principles related to their individual vocational area. Also, they will understand the connection between climate change and human health. This learning outcome will help the learner understand how our vocational area and everyday life contribute to climate change. Furthermore, the impact of climate change on own personal life will be assessed. Learners may also enhance their investigative skills through a site visit applicable to vocational areas, for example to include option to visit – quarry, scrap yard, waste disposal area, amongst other. During this session, the learners will be empowered to take action to develop a project that addresses, for example, an environmental issue.

Elective Learning Outcomes

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

1. *Investigate ethical issues in science and scientific developments.*
2. *Use information and services to make informed health-related decisions.*
3. *Investigate processing of materials relevant to individual vocational area.*
4. *Apply chemistry principles to vocational area of practice.*
5. *Identify basic chemical reactions.*
6. *Identify the connection between climate change and human health.*
7. *Carry out a fieldwork session related to scientific research and development.*
8. *Identify the link between the physical world and everyday day life situations.*

CDKSK-304-2316: 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 become competent in using word processing, spreadsheet, and presentation software to create, format and finish documents, workbooks and slide shows that contain various elements. This unit also introduces terms related to artificial intelligence and how it is being used in real life situations, information literacy and the use of online communities and online tools to build and maintain an online presence.

Elective Learning Outcomes

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

1. *Use Office Productivity Essentials to create documents and presentations.*
2. *Identify concepts related to Artificial Intelligence.*
3. *Use Online Essentials Tools.*
4. *Identify concepts related to Information Literacy.*
5. *Use a spreadsheet to produce accurate work outputs.*