MCAST

MQF/EQF Level 4

CE4-A3-21

Advanced Diploma in Masonry Heritage Skills (Mastru)

Course Specification

Course Description

This is a course which consists of higher level study units in stone restoration. It offers students the knowledge and skills which they will need to assimilate in order to be able to analyse and generate solutions concerning typical restoration interventions. The practical training is carried out in workshops, laboratories and at heritage sites.

Throughout the programme, students will have the opportunity to work on historic sites and structures, to master maintenance, protection and preservation skills, and apply cleaning and testing techniques.

Programme Learning Outcomes

At the end of the programme the learner will be able to:

1. *Carry out a risk assessment of the surrounding working environment before and after executing an assigned task;*
2. *Use basic tools on surfaces to stabilise, preserve and restore historic buildings;*
3. *Prepare written specifications/drawings and evaluation reports for work to be carried out on historic structures;*
4. *Identify historic building materials and the main types of materials currently in use.*

Entry Requirements

MCAST Diploma in Trowel Trades (Plastering and Tile Laying or Painting and Decorating)
or
MCAST Diploma in Construction and Stone Masonry or MCAST Diploma in Construction Engineering
or
MCAST Diploma in Heating, Ventilation and Air-Conditioning or MCAST Diploma in Masonry Heritage Skills (Sewwej)
or
MCAST Diploma in Building Services Installations (Plumbing or Plumbing and Electrical)
or
4 SEC/O-Level/SSC&P (Level 3) passes Preferred: English, Physics, Chemistry, Engineering Technology

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: 3000

Mode of attendance: Full Time

Duration: 3 Years

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

Target group: Students exiting compulsory education

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 004* 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 004* 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	Year	Semester
ETCVN-406-1504	Conservation and Restoration Theory	6	2	YEAR
ETCVN-406-1505	Limestone Studies, Protection and Maintenance	6	3	YEAR
ETARH-406-1501	History of Architecture	6	3	YEAR
ETH&S-406-1504	Occupational Safety in the Construction Industry	6	1	YEAR
ETCVN-406-1507	Documentation and Recording Techniques	6	1	YEAR
ETCVN-406-1506	Cleaning Techniques	6	2	YEAR
ETCVN-406-1508	Pointing and Repair of Stonework	6	1	YEAR
ETCVN-406-1509	Deterioration Mechanisms	6	3	YEAR
ETCNS-406-1501	Historic and Contemporary Construction Technology	6	1	YEAR
ETCVN-406-1510	Stereotomy and Stone Dressing	6	1	YEAR
ETPAM-406-1502	Restoration Site Management	6	3	YEAR
ETCNS-406-1502	Scaffolding Systems and Drawings	6	2	YEAR
ETQSS-406-1501	Quantity Surveying	6	2	YEAR
ETMTS-406-1501	Materials Science	6	1	YEAR
ETPRJ-412-1508	Synoptic Project - Masonry Heritage Skills	12	3	YEAR
ETCDN-406-1601	Vocational Computer Aided Drafting and Design (2D)	6	2	YEAR
CDKSK-406-2001	English	6	2	YEAR
CDKSK-404-1915	Employability and Entrepreneurial Skills	4	2	YEAR
CDKSK-402-2104	Community Social Responsibility	2	2	YEAR
ETCMP-406-1617	Vocational Competences: Apprenticeship in Masonry Heritage Skills	6	2	YEAR
	Total ECTS	**120**	**/**	**/**

ETCVN-406-1504: Conservation and Restoration Theory

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

This Unit has been designed for candidates who wish to work or currently work in the industrial field of conservation masonry. The Unit is suitable for candidates from the construction and related service industries and trades. The skills are transferable within different working environments but the Unit is aimed at candidates whose normal place of work would be a site, a conservation project or a similar working environment.

This unit will introduce students to the concept of building conservation and to illustrate and define the broad range of works it may encompass. Candidates will develop knowledge and understanding of the principles of conservation in the built heritage as detailed in current guidance and conservation charters. They will also be able to explain the development of International Conventions and Charters on conservation and evaluate the importance of the necessary preparatory building conservation legislation on successful repair of a historic building. They will also demonstrate the ability to differentiate between the repair approaches' used when dealing with historic buildings and the terminology used. Candidates will also be able to select suitable repair interventions for historic buildings and be able to demonstrate a basic appraisal process for devising a masonry conservation repair strategy. Candidates successfully completing this Unit will understand the principles of conservation as detailed in current guidance and conservation charters. Candidates who complete this Unit may then go to work on a site or conservation project or a similar working environment.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Demonstrate knowledge and understanding of conservation legislation, ethics and principles;*
2. *Define the roles of the professionals involved in heritage sites, in particular that of the "Mastru";*
3. *Inspect a historic building and determine the extent of repairs required;*
4. *Develop a conservation repair strategy for a specific historic building.*

ETCVN-406-1505: Limestone Studies, Protection and Maintenance

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

This Unit has been designed for candidates who wish to work or currently work in the industrial field of conservation masonry. The Unit is suitable for candidates from the construction and related service industries and trades. The skills are transferable within different working environments but the Unit is aimed at candidates whose normal place of work would be a site, a conservation project or a similar working environment.

This unit will introduce students to the concept of limestone use and to illustrate and define the broad range of works it may encompass. Candidates will develop knowledge and understanding of limestone and its performance. They will also be able to explain the impact of a number of issues relating to building performance (compatibility, location, exposure, environment and seasonal influence).

They will also be able to explain the development of limestone technology and evaluate the importance of local limestones for repair of historic buildings. They will also demonstrate the ability to differentiate between various types of limestone used when dealing with historic buildings and the terminology used. Candidates will also be able to select suitable stone for repair interventions for historic buildings and be able to demonstrate a basic appraisal process for stone specification.

Candidates successfully completing this Unit will understand the impact of limestone use on technology and the environment. Candidates who complete this Unit may then go to work on a site or conservation project or a similar working environment.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Determine the geological classification of building stones;*
2. *Determine the process and impact of quarrying on the environment;*
3. *Examine properties and characteristics of limestone, in particular quality vernacular stone;*
4. *Determine the development of quarrying and fabricating technology.*

ETARH-406-1501: History of Architecture

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

This Unit has been designed for candidates who wish to work or currently work in the industrial field of conservation masonry. The Unit is suitable for candidates from the construction and related service industries and trades. The skills are transferable within different working environments but the Unit is aimed at candidates whose normal place of work would be a site, a conservation project or a similar working environment.

This study unit should introduce the learner to architecture as an art, form and function. Through this unit the learner should appreciate the need of knowing the history of the building prior to carrying out any intervention. Most of this study unit should be about local architecture and its development through different phases in history. There should be a thorough understanding and appreciation of local vernacular architecture and the influence this had on the construction technology. They will also demonstrate the ability to identify various elements of a building, the terminology used and the appropriate architectural age. Candidates will also be able to select the correct level of technology appropriate to different architectural ages.

Candidates successfully completing this Unit will have a basic understanding of the influence various architectural ages have had on vernacular architecture.

Candidates who complete this Unit may then go to work on a site or conservation project or a similar working environment.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Appreciate the meaning of architecture;*
2. *Differentiate between different historic building styles;*
3. *Examine historic buildings and identify various elements and features of historic buildings;*
4. *Examine the level of technology appropriate to different architectural ages.*

ETH&S-406-1504: Occupational Safety in the Construction Industry

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

This unit provides learners with the essential Health & Safety knowledge and skills to demonstrate best practice in a construction and engineering environment or sector. The unit provides learners with an awareness of relevant legislation and should underpin all activities learners take part in.

This unit is about maintaining a healthy and safe working environment across the range of installation or maintenance work, this involves being able to use safe procedures when working with others and use safe working practices.

The person carrying out this work must possess the skills and knowledge to ensure that their own actions do not create any health and safety risks, they do not ignore hazards with significant risk in the workplace and that they take sensible action to put things right.

There are many potential hazards within our industry. This unit is designed to ensure that those that work within it are aware of the potential dangers, likely hazards and where to source: safety information, appropriate regulations and apply them to the workplace and the people who operate within it.

This unit is about identifying the hazards and risks that are associated with the job. Typically, these will focus on the working environment, the tools and equipment that are used, materials and substances that are used, working practices that do not follow laid-down procedures, and manual lifting and carrying techniques.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Know health and safety legislation;*
2. *Know how to handle hazardous situations;*
3. *Know electrical safety requirements when working in the Construction Industry;*
4. *Know the safety requirements for fire and heat producing equipment;*
5. *Know the safety requirements for using access equipment in the Construction Industry;*
6. *Know the safety requirements for working safely in excavations and confined spaces in the Construction Industry;*
7. *Apply safe working practice.*

ETCVN-406-1507: Documentation and Recording Techniques

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

This unit is aimed at gaining knowledge of masonry heritage skills. Within this unit the learner will encompass documentation and recording techniques that can be utilized within industry. The methods of teaching will be at the discretion of the delivering centre but must not be detrimental to the contents of the unit.

Documentation is a necessary skill that all industries require for the communication of information to the relevant parties involved within varying contracts. Modern methods must be utilized where applicable ensuring sector leading initiatives practices are within reason of the delivering centre. Traditional methods must be covered due to the widespread needs and development of work and contracts within modern society.

Recording of material within Built Heritage is a skill that must be mastered to ensure that all procedures within the project can be satisfied. Paper based is commonly still the most utilized method so evidenced can be procured through this channel. Digital media is more commonly available and this can also be utilized.

Personnel development of the learner will ensure that they are knowledgeable of documentation and recording techniques within a medium sized heritage construction project. A blended learning of site experience and academic underpinning can develop the leaner to be deemed competent within this field.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Characterize documental recording methods;*
2. *Produce appropriate methods of visual recording;*
3. *Identify critical components within a historical structure;*
4. *Undertake a simple survey identifying degradation of components.*

ETCVN-406-1506: Cleaning Techniques

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

The unit can be utilized for the hand skills and theoretical background for stone cleaning. There will be various methods of stone cleaning utilized to allow a greater understanding of the most appropriate cleaning system matching the background type. The unit will be hands on unit which entails the practical uses of the cleaning equipment and the spectrum of uses and limits of the machinery. Aspects of the types of the most suitable type of cleaning and the background will be investigated. All relevant legislation and good practice should be adhered to. A conservation or restoration approach should be utilized in this unit, but in general the undernoted areas will be addressed:

- Identify the machinery utilized in stone cleaning;
- Operate stone cleaning machinery;
- Maintain stone cleaning machinery;
- Evaluate an area for cleaning methods;
- Select the correct method stone cleaning technique;
- Utilize mechanical stone cleaning methods such as micro sandblasting;
- Utilize stone cleaning methods such as nebulous sprays;
- Prepare an area for stone cleaning;
- Use mechanical machinery to clean a building in a methodical manner;
- Apply the correct aftercare for post stone cleaning procedures;
- Dispose of waste from a stone cleaning procedure in heritage buildings;
- Work in a healthy and safe manner during stone cleaning process.

There is no need for the learner to have previous learning. As this a practical unit the leaner must be fully inducted of site safety and procedures. With the use of the machinery within this unit a high level of supervision may be required. There is no minimum area to be cleaned this can be at the discretion of the delivering centre. The delivering center should aim to have this unit as sustainable as possible. The learner should have access to any relevant risk assessment which are relevant to this unit.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Overview of the various stone cleaning techniques;*
2. *Undertake a cleaning process with appropriate methods, tools and materials such as surgical knife, paper pulp etc.;*
3. *Evaluation of the practical use of stone cleaning;*
4. *Clean an area using a nebulous water spray.*

ETCVN-406-1508: Pointing and Repair of Stonework

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

This unit has been designed to introduce candidates to a range of issues associated with the pointing and repair of natural stone structures. Students will develop a knowledge and understanding of environmental and structural conditions that influence the effectiveness of lime based mortars and how additives, admixtures, aggregates and fluidificants can be used to alter the properties of mortar mixes. Effective methodologies for producing and curing mortars pre and post application are also covered.

Students will identify a range of structural faults and aesthetic issues associated with natural stone structures and will be examined on their ability to propose appropriate remedial solutions and interventions in accordance with local, national and international legislation.

Students will also be expected to understand the processes associated with preparing stone surfaces for lime mortar repairs and pointing in a range of environmental and structural conditions.

The knowledge, understanding and skills required to work effectively with mortars and mortar repairs is vital to the protection and maintenance of masonry heritage. This unit aims to give learners the opportunity to gain knowledge, understanding and practical skills necessary to work effectively within this area. Knowledge and skills developed during this unit may be transferable across a number of related units within the Masonry Heritage programme.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Evaluate various lime based mixes designed for particular situations;*
2. *Identify structural and aesthetical cases;*
3. *Describe the methodology to prepare various lime based mixes.*

ETCVN-406-1509: Deterioration Mechanisms

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

This unit has been designed to introduce candidates to a range of issues related to the deterioration, protection and maintenance of stonework within a masonry heritage context. Candidates will develop a knowledge and understanding of soiling and decay mechanisms associated with natural stone and will be expected to identify and propose suitable remedial interventions for structures in a state of deterioration. They will engage with scientific principles relating to the performance of stone and a range of compatible construction materials and will consider the impact that mechanical and chemical properties of masonry materials, alongside environmental conditions, can have on the speed and extent of deterioration.

Candidates will also demonstrate knowledge of protection and maintenance techniques common within the local context and be able to devise basic schedules and strategies for protecting masonry structures.

The knowledge, understanding and skills required to complete this unit will prepare candidates to protect and maintain masonry structures. This unit aims to give learners the opportunity to gain knowledge, understanding and practical skills necessary to work effectively within this area. Knowledge and skills developed during this unit may be transferable across a number of related units within the Masonry Heritage programme.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Describe the soiling mechanisms associated with natural stone;*
2. *Evaluate the similarities, incompatibilities and affinities between stone and a range of common construction materials;*
3. *Describe and identify a range of deterioration mechanisms associated with natural stone;*
4. *Describe and identify a range of protection and repair interventions for stone structures;*
5. *Evaluate continuous maintenance techniques and the use of sacrificial layers.*

ETCNS-406-1501: Historic and Contemporary Construction Technology

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

This unit is aimed at gaining knowledge of Masonry Heritage skills. Within this unit the learner will encompass Historic Construction technology that can be utilized within the industry. The methods of teaching will be at the discretion of the delivering centre but must not be detrimental to the contents of the unit.

The five areas that are covered in this unit are

- Floors
- Roofs
- Masonry walls and foundations
- Shoring systems
- Formwork arrangements

These building elements are primary parts of any historical building. As well as conservation and restoration terms a wide knowledge of building terms are utilized within this unit. The unit should utilize vernacular methods and materials but should also cover any aspects that are not dully covered in the local spectrum of historical buildings.

Whenever possible a combination of theory and practical consideration of topic areas within the subject will reinforce learning. And provide a realistic learning environment for the area of Historic Construction Technology.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Describe various types of floors and appropriate construction methods;*
2. *Describe various types of roofs and appropriate construction methods;*
3. *Explain different forms of foundations and their respective importance;*
4. *Describe how masonry walls could become unstable during construction;*
5. *Understand the use of construction methods to provide temporary support during work on openings in external and external walls;*
6. *Assess types of formwork arrangements and their installation procedures.*

ETCVN-406-1510: Stereotomy and Stone Dressing

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

This unit is aimed at gaining knowledge of Masonry Heritage skills. Within this unit the learner will encompass documentation and recording techniques that can be utilized within industry. The methods of teaching will be at the discretion of the delivering centre but must not be detrimental to the contents of the unit.

The learner does not need any specific hand skills to undertake the unit. The methods utilized are to be relevant to historical restoration or conservation. The methods and techniques should be in line with current legislation and good practice as proposed by a relevant conservation authority.

The specifics of this unit are covering the art of cutting stone into three dimensional shapes using traditional hand held tools. The learner must be made aware that the training in hand cutting is not sufficient to practice as a stonemason, but will provide a strong learning platform, from which further vocational development can take place to improve the individual's skills base.

The use of arched vaults will be utilized to create a subject to form from stone. The student should be made aware of any Health and Safety issues that will occur during the unit. The learner should have access to any Risk assessment involved that are relevant to the unit. As this is a practical unit all efforts should be investigated to create a sustainable learning process.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Define various technical terms used for arch vaults;*
2. *Undertake stone dressing operations;*
3. *Describe a range of stone dressing tools and their maintenance;*
4. *Demonstrate competence in establishing voussiors of complex arches;*
5. *Set out of a range of in-situ construction datum points.*

ETPAM-406-1502: Restoration Site Management

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

This unit identifies the knowledge and competences needed to contribute to the development and maintenance of positive working relationships with other people, in accordance with organisational and workplace requirements.

This unit covers the different roles and responsibilities within organisations and the workplace. The learner will be able to identify the current and mandatory legislation, regulations and policies which are required to be complied with in an organisation.

The learner will be able to apply and use the correct planning and administration methods to organise and understand work programmes and the requirements of different trades. The learner will be able to demonstrate the use of formal and informal communication with other persons within a workplace and be able to apply a methodical approach to labour and material estimates.

The learner will understand the use of different communication methods throughout regarding the different personnel and their individual requirements within a workplace. The unit will demonstrate the different types of methods used to ensure all persons within a working environment are informed about work plans and activities that affect them.

The unit will demonstrate how persons within a workplace should know how they can develop and maintain positive working relationships with relevant people. The learner should understand the importance of appearance and behaviour, the feelings and expectations of others, and effective communications.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Identify and understand the members of the construction team and their role within the Built Heritage Environment;*
2. *Identify and understand how to apply information sources in the Built Heritage Environment;*
3. *Communicate with other persons within the Built Heritage Environment;*
4. *Apply the correct Planning and Administration methods within a working environment.*

ETCNS-406-1502: Scaffolding Systems and Drawings

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

The purpose of this unit is to understand basic terminology used, comprehend the sequencing in the erection of static and mobile scaffolding systems. And then apply this understanding to the correct erection of specified scaffolding systems.

Learners will be assessed on the inclusion of all relevant components in a correctly ordered sequence in the completion of specified scaffolding systems. Issues will be considered from a number of viewpoints – area available for scaffold / access system, materials available, safe system and sequence of work. Other issues will relate to compliance with safety requirements for scaffolding systems in addressing items like platform sizes, guard rail heights and bracings to be included. In this context its of great importance that the student can transfer their knowledge gained through demonstration and work independently.

In unison with the above information, all work will be carried out in a safe and efficient manner compliant with current industry standards and practice – NASC TG20 13 is considered crucial in conjunction with BS/EN 12811-1.

The specific objectives for this unit, are that the learner undertakes a logical /correct sequence to this and similar tasks. And that all relevant issues, such as comprehension and correct practice have been satisfactorily addressed. In this respect the unit provides a particularly realistic preparation for working life scaffolding erection processes.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Undertake all static and mobile scaffolding works in a safe and logical manner;*
2. *Identify the basic component parts of static and mobile scaffolding systems;*
3. *Erect and dismantle static and mobile scaffolding systems;*
4. *Explain fall protection and arrest equipment utilised in scaffolding operations.*

ETQSS-406-1501: Quantity Surveying

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

This unit is aimed at gaining knowledge of masonry heritage skills. Within this unit the learner will encompass measurement and tendering techniques that can be utilized within industry. The methods of teaching will be at the discretion of the delivering centre but must not be detrimental to the contents of the unit.

The unit addresses the areas of quantities required for projects their measurement and assessment, through the pre and post-contract stages. Dealing with initial measurement through produced Bills, to the estimation and submission of tender of prescribed areas of work.

The learning is a blend of practical and theoretical work which will allow the teaching centre a range of teaching and learning styles to be encompassed.

The student should have an awareness of personnel involved with the construction industry. A level of basic arithmetic is required to complete this unit. All practices should be relevant to historic building conservation and restoration as appropriate to local practice. All work should be completed to current legislation and good practice should always be adhered.

Any Health and safety issues should be shown on risk assessments which should be available to the student as part of the unit. Where possible practical work / exercises should be relevant to vernacular practice.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Describe the uses of measurement at pre and post contract stage;*
2. *Explain the purpose of estimating and common techniques used;*
3. *Explain the purpose of tendering;*
4. *Calculate and use labour rates and unit rates.*

ETMTS-406-1501: Materials Science

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

The purpose of this unit is to provide the student with an appreciation of the relationship which exists between practical craft work and related scientific principles. It is intended that this unit will develop an understanding of the material technology involved within the construction industry. The unit will use a series of simple experiments to provide a platform of basic knowledge, which can be applied more specifically to practical situations.

Learners will be assessed on correctly undertaking laboratory exercises, recording results and making acceptable conclusions linked to scientific principles. This in unison with a general understanding of the chemical, mechanical and physical properties of construction materials related to the Built Heritage.

In conjunction with the above information, all work will be carried out in a safe and efficient manner compliant with current safety standards and practice. In the context of relevant equipment and resources involved in laboratory exercises / practical demonstrations within the various stages of the unit requirements.

The specific objectives for this unit, are that the learner undertakes a logical /correct sequence to this and similar tasks. And that all relevant issues, such as undertaking laboratory exercises, recording results and making acceptable conclusions linked to scientific principles are carried out correctly. This in unison with a general understanding of the Chemical, mechanical and physical properties of common construction materials being satisfactorily addressed.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Describe the properties of construction materials;*
2. *Undertake simple laboratory experiments;*
3. *Demonstrate laboratory reporting procedures;*
4. *Know the practical application of scientific principles to construction materials.*

ETPRJ-412-1508: Synoptic Project - Masonry Heritage Skills

Unit Level (MQF/EQF): 4
Credits: 12
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 300

Unit description

This unit is designed to assess the student's ability to utilize the knowledge and skills developed throughout the whole programme and in particular will develop the skills, that will reinforce any future working roles within this working environment.

The student will be provided a relevant case study with relevance on conservation or restoration. The learning will encompass the use of IT skills and expand their knowledge and capability in the areas below:

- Project Management research and planning skills
- Professional issues: legal and ethical considerations
- Develop of working flexibility and cooperation with others
- Develop critical and evaluative thinking
- Develop practical working skills
- Improve employability skills

If successful, the student shall proceed to the next level of studying

This unit will be continual throughout the course with the student evidencing his work at the point decided by the delivering institution. The student must be made aware of relevance of this unit and its function in bringing together a plethora of skills developed throughout the course.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Interpret a given conservation /restoration Brief;*
2. *Collate information relevant to the brief and its geographical placement;*
3. *Critically evaluate a case;*
4. *Develop hand-on skills;*
5. *Working in a professional manner.*

ETCDN-406-1601: Vocational Computer Aided Drafting and Design (2D)

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

Nowadays, computer-based technology has facilitated a lot of construction related tasks, ranging from the off-site fabrication of reinforced concrete slabs using dedicated computer numerical controlled machinery to the generation of drawings of buildings. The latter is just one of the capabilities of Computer-Aided Design and Drafting (CADD) technology.

This course is intended to anyone who is seeking to acquire skills in basic two-dimensional (2D) features of CADD, and who is interested in applying the potential of this technology in the construction industry.

This is a learning-by-doing type of unit and it will provide learners with the opportunity to apply the skills they have learnt to produce accurate detailed drawings.

The advantages of using CADD technology over manual drawing techniques will be explained at the outset of this unit. Learners will acquire knowledge on the software and hardware requirements needed to run and use effectively a CADD package.

In addition, learners will be able to independently select the appropriate CADD functions for the task at hand. Furthermore, learners will be equipped with the necessary skills to independently produce scaled drawings with all required dimensions and other basic information deemed useful for the completion of a project.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Install and use a CADD software package;*
2. *Use CADD software to create and modify 2D drawings;*
3. *Use CADD software to manage object properties; create and add text, dimensions, hatching and blocks to drawings;*
4. *Use CADD software to plot drawings.*

ETCMP-406-1617: Vocational Competences: Apprenticeship in Masonry Heritage Skills

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit description

These Work-based Vocational competences comprise basic masonry heritage skills such as the interpretation of information, the adaptation of safe and healthy working practices, the selection of the right materials, components and equipment and the ability of handling and using the right tools for the conservation and restoration projects.

Among other duties, the apprentice may assist in the relaying, replacement and repair and maintenance of heritage roof coverings; may produce plaster and render finishes on conservation or restoration projects or earthen structures; may conserve, restore or repair solid or render surfaces; may conserve, restore or repair fibrous plasterwork; may produce fibrous plasterwork on conservation or restoration and may build dry stone structures.

The apprentices' responsibilities will require them to comply with the organisational policy and procedures for all the restoration activities undertaken, and to report any problems with the activities, tools or equipment used that one cannot personally resolve, or that are outside their permitted authority, to the relevant people. They must ensure that all tools, equipment and materials used in the conservation and restoration skills activities are removed from the work area on completion of the work, and that all necessary job/task documentation is completed accurately and legibly. They will be expected to work with minimal supervision, taking personal responsibility for their own actions, and for the quality and accuracy of the work that they carry out. Apprentices will understand the safety precautions required when carrying out the restoration activities, especially those who work at certain heights to take the necessary safeguards to protect themselves and others in the workplace or on site. They will be required to demonstrate safe working practices throughout.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Identify main processes followed/practiced at the place of work*
2. *Use tools &/material &/equipment &/machinery to carry out safely assigned tasks*
3. *Communicate effectively in a workplace environment with all stakeholders*
4. *Review personal and professional experience achieved throughout your work placement*
5. *Follow good work practices at the place.*

CDKSK-406-2001: English

Unit Level (MQF/EQF): 4
Credits: 6
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 150

Unit Description

The main objective of this unit is to prepare students to use the English language to understand, analyse, organise and communicate specific technical knowledge by inferring meaning from, and using, embedded information, being able to evaluate information critically and communicate through different types of texts, as required by various but often specific technical contexts within the selected field of study.

The emphasis is on the processes needed to transition from use of the English language in General Education to that required for access to Higher Education.

In particular, L4 Key Skills English is targeted at learners who have completed Foundation College programmes (Levels 1 to 3) and seek to further their studies at Technical or Degree level.

In this respect, this unit recognises the necessity to meet two linguistic demands at this threshold level; strengthening students' linguistic competences to be able to communicate more specifically within their vocational area and stream and to prepare them for more rigorous academic thinking, research and writing as necessitated by degree courses.

Being introduced at this level are core and elective unit outcomes. Reading and writing outcomes are core components in this syllabus while listening and speaking are elective components. Every L4 programme must deliver the two core outcomes and any one of the two elective learning outcomes. The elective criteria to be assessed cannot be selected from and across both outcomes.

Learning Outcomes

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

1. *Read technical texts effectively to improve knowledge of the subject area;*
2. *Understand information presented orally in the form of recordings, or talks, discussions, seminars, interviews or presentations;*
3. *Demonstrate own understanding of the subject matter via oral presentation, mock interviews or similar oral delivery;*

4. *Write a research paper or technical report demonstrating cohesion, structure and appropriate style.*

CDKSK-404-1915: Employability and Entrepreneurial Skills

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

Unit Description

This unit complements the vocational and key skill units at Level 4 and provides an opportunity for learners to enhance their employability and entrepreneurial skills.

Quite often, learners tend to focus most on technical skills and competences required in a certain trade which enable them to access employment. On the other hand, employers expect employees to be appropriately skilled to follow instructions, take initiative, work effectively in a team, take a lead when necessary and more. In view of this the unit starts with an introduction to the 4th industrial revolution and proceeds to the transversal skills necessary to find employment, retain employment and advance at the place of work. Learners will be able to highlight their strengths and identify the areas that require improvement.

The rest of the unit focuses on entrepreneurial skills, a skill which is one of the most important transversal skills identified by UNESCO. Learners are introduced to methods which can be used to generate new and innovative business ideas and methods which help them evaluate ideas and choose the most feasible. Furthermore, learners will cover the various stages of product and/or service development, including market analysis, processes, pricing strategy, promotion and resources required.

Learners will work in a small team and by the end of the unit they will have the opportunity to develop a business idea which is commercially viable. Furthermore, they will present the idea to prospective investors/stakeholders.

Learning Outcomes

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

1. *Understand the employability skills required for Industry 4.0*
2. *Use idea generation techniques to come up with ideas and evaluate chosen ideas*
3. *Understand the various stages of product and/or service development*
4. *Work in a team to develop a business idea which is commercially viable*

CDKSK-402-2104: Community Social Responsibility

Unit Level (MQF/EQF): 4
Credits: 2
Delivery Mode: Fully Face-to-Face Learning
Total Learning Hours: 50

Unit Description

This unit focuses on Community Social Responsibility and provides an opportunity for learners to better understand themselves and the others and to establish goals in life. Community social responsibility enables learners to understand their strengths and areas for improvement and prepares them for life, employment and to become active citizens in society.

Moving away from traditional delivery of other units, learners will be empowered to take ownership of their learning process. Hence, community social responsibility will be delivered through a combination of workshops, small-group sessions with mentors and various opportunities to reflect.

The set of sessions will tackle community social responsibility skills and will mostly focus on the self, the ability to work independently and important values in life. The second set of sessions will address interpersonal skills and will focus on working with others, dealing with diversity and conflicts. Furthermore, at the end of the sessions, the learners will be introduced to the importance of active citizenship in life.

Learning Outcomes

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

1. *Identify personal goals through self-reflection.*
2. *Evaluate how collaboration with others can be more effective.*
3. *Explain the importance of giving and receiving feedback.*
4. *Contribute actively to make a difference in society.*