MCAST

MQF Level 4

CA4-A3-21

Advanced Diploma in Graphic Printing

Course Specification

Course Description

This course aims to deliver both general as well as area-specific education and training. It provides opportunities for direct employment in the trade. This qualification enables learners to develop a range of skills and techniques, personal qualities and attitudes essential for successful performance in working life. Learners will harness theoretical knowledge at the institute, backed up by practical apprenticeship within the printing industry.

Programme Learning Outcomes

At the end of the programme the students is able to

1. *Understand printing fundamentals, production and finishing processes.*
2. *Perform printing tasks in accordance with clear instructions.*
3. *Understand the basic materials, processes and technologies in graphic printing.*
4. *Use computer applications, colour management and graphic press technologies.*

Entry Requirements

MCAST Diploma in Printing or MCAST Diploma in Art and Design or Diploma in Media or 4 SEC/O-Level/SSC&P (Level 3) passes

Compulsory: English Language

Applicants may be asked to sit for an interview and/or present a portfolio.

Current Approved Programme Structure

Unit Code	Unit Title	ECVET/ ECTS	Year
CAGPR-406-2101	Fundamentals of Printing Processes	6	1
CAGPR-406-2102	Pre-Press Procedures	6	1
CAGPR-406-2103	Post-Press Procedures	6	1
CAART-406-1625	Exploring Digital Media	6	1
CAGPR-406-2104	Printing Materials, Technology and Processes	6	1
CAGPR-406-2109	3D Printing	6	1
CAGPR-412-2110	Traditional Printing Methods and Techniques	12	1
CDKSK-406-1705	Science for Arts	6	1
CDKSK-406-2109	Information Technology	6	1
CAGPR-406-2105	Basic Colour Management	6	2
CAART-406-1637	Layout Design for Print	6	2
CAGPR-406-2106	Tactile Graphics	6	2
CAGPR-406-2107	Editorial Design and Publishing	6	2
CAART-406-1609	Artistic Print Making	6	2
CAGPR-406-2111	Sign Making and Large Format Printing	6	2
CAGPR-406-2108	Contextual Studies in Graphic Design and Print	6	2
CACMP-412-2101	Vocational Competencies in Graphic Printing	12	2
CDKSK-404-1915	Employability and Entrepreneurship Skills	4	2
CDKSK-402-2104	Community Social Responsibility	2	2
Total ECVET/ECTS		120	/

ECVET are used for programmes at MQF Level 1-4 whilst ECTS is used for programmes at MQF Level 5-6

CAGPR-406-2101 Fundamentals of Printing Processes

Unit level (MQF): 4

Credits: 6

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Unit Description

The growth of the printing industry has been expansive with a variety of printing methods and techniques covering a wide range of demands needed by various sectors. These printing techniques and processes are constantly being innovated in order to reach the ever growing requirements of various industries.

The purpose of this unit is to take the learner into great detail in a number of printing sectors and techniques covering a wide range of industries. The printing sectors this unit will be covering are Lithography, Screen printing, Flexography, Digital printing, Sublimation, Letter press, Gravure,Intaglio and much more in order to give the learner a full coverage in printing processes.

This unit will also take these various printing methods and go further in depth with tackling how these methods are applied in the following sectors which are Food Packaging, Commercial, Security, and Medical Printing. Learners will be expected to know in detail the different procedures, processes and techniques applied to each printing process and sector.It will be vital for Learners to witness demonstrations of printing processes in order to better grasp what processes and procedures are taken especially when Food, Medical or Security printing is involved.

Learners will also be expected to research and demonstrate in detail different paper stocks, materials and inks found in various printing sectors and how to handle and work with such materials professionally in order to avoid waste or inferior printed products.Learners will also be expected to know how to properly maintain and clean various printing equipment.

The fundamental purpose of this unit is to make the learner aware of the wide variety of printing processes and sectors available in todays industry.

Learning Outcomes

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

1. *Identify key areas of Performing Arts practice from the nineteenth century to today;*
2. *Demonstrate the contextual factors influencing historical and contemporary Performing Arts practice;*
3. *Use relevant research and documentation methods for referencing own critical appraisal;*
4. *Produce and present a critical appraisal on a specific area of Performing Arts practice.*

CAGPR-406-2102 Pre-Press Procedures

Unit level (MQF): 4

Credits: 6
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Unit Description

Pre-press is the term used in printing and publishing for the procedures and processes which occur between the creation of a print layout and the final print. This is relevant to any form of printing found in the industry as a whole. Pre-press describes the various stages an artwork must go through before printing can commence.

Such processes may include the separation of artwork in different colours in order to create printing plates or creating artworks ready for dieblocks for hot foiling processes or creating print ready templates for digital print machines to name but a few. This units goal is to allow learners to go in depth into the various pre-press producers and methods found in the printing industry both traditional as well as modern and be able to identify, explain and distiguish the different pre-press procedures and what techniques are best implemented for the right printed job.

Learners will be introduced to a number a methods of images transferring from negatives to printing plates as well as choosing the correct type of plates for the given job. Learners will also be expected to know how to manufacture various plates, blocks and templates for given jobs. Learners will also be expected to become proficient in a number of industry standard desktop softwares which are used to create digital artworks as well as how to use the appropriate techniques and tools required to prepare the digital artwork for print.

Learners will expected to approach this unit in a more broad way focusing on how pre-press is tackled in a number of printing sectors ranging from food,medical and security to commercial printing and what rules, parameters and regulations a pre-press operator must follow.It is important to remember that even though pre-press is the first stage in the printing process, in reality the role of pre-press begins the minute the client enters the printing establishment. For this reason the unit will also expect learners to be able to communicate professionally in order to be able to assist clients needs and requirements. This would be in the form of being able to interpret instructions as well as estimate and manage lead times and so on in order to deliver a successful printed material.

Learning Outcomes

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

1. *Identify key areas of Performing Arts practice from the nineteenth century to today;*
2. *Demonstrate the contextual factors influencing historical and contemporary Performing Arts practice;*
3. *Use relevant research and documentation methods for referencing own critical appraisal;*
4. *Produce and present a critical appraisal on a specific area of Performing Arts practice.*

CAGPR-406-2103 Post-Press Procedures
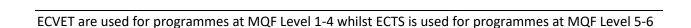
Unit level (MQF): 4

Credits: 6

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Unit Description

Post-press operations involves everything that takes place after print. Post press is comprised of a number of different processes ranging from cutting, binding, folding and much more. Each and every process involved in completing a printed product has a number of techniques, machines, chemicals and adhesives. Like pre-press and printing, post-press is very important in order to be able to professionally complete print jobs. It is important to remember that post press procedures although similar in each sector of printing, at the same time, have a very big difference also. Learners will be introduced to post-press procedures in a number of printing sectors such as food packaging, medical supplies, security finishing as well as commercial printing both for small and large format.

The unit will cover aspects ranging from offline to inline mechanical finishing techniques and processes ranging from guillotine operations to binding techniques. Learners will be expected to use proper terminology associated with the processes as well as being able to explain and understand the various post press processes and techniques found in the printing industry going into the different sectors namely commercial, security, food, medical, large format and promotional.

Learners will be given the opportunity to discover and demonstrate a variety of methods and techniques found in post-press. This unit will also tackle in detail the importance of quality control along with the ability to assess final printed and finished works in order to reach market standards. Learners will also be expected to learn and practise proper machine and work station cleanliness and maintenance.

Learning Outcomes

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

1. *Research the various post-press machinery found in different printing sectors.*
2. *Demonstrate various post-press procedures used in completing multipage publications*
3. *Identify the different standards, rules and regulations used in food, medical, security, and commercial post-press.*
4. *Evaluate the post-press procedures found in printed products found in the different printing sectors.*

CAART-406-1625 Exploring Digital Media

Unit level (MQF): 4

Credits: 6
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Unit Description

This is a practical skill based unit where students will demonstrate an understanding of digital media applications in a creative context. Learners will demonstrate the ability to use required tools and techniques for digital imaging. Learners should show proficient uses of graphic design software and demonstrate this through a portfolio of work.

In completing the unit, students will have gained knowledge and understanding of the uses of digital media within their creative field and in a contemporary context. They will also develop the ability and understanding to allow them to use design software to a proficient level. This will include being able to save and file work effectively as well as being able to use other design tools for image editing and manipulation.

This unit should link closely to the industry in which the students study as well as serve as a good basic knowledge for further development and study. The students should produce a portfolio of work demonstrating their understanding of the required learning outcomes. This should take the form of a digital sketchbook or portfolio.

Learning Outcomes

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

1. *Identify the uses of digital media in an Art and Design context*
2. *Develop creative raster based designs*
3. *Develop creative vector based designs*
4. *Save, export and store correct file formats for both raster and vector designs*

CAGPR-406-2104 Printing Materials, Technology and Processes

Unit level (MQF): 4

Credits: 6
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Unit Description

In the printing industry it is easy to fall prey to the belief that printing is only constrained to ink and paper. Society often overlooks the fact that printed products are surrounding us in everything we see and do. From the clothes we wear to the food we buy, printing has a huge impact and importance in our everyday functions.

Due to this massive demand for information, delivery, functionality as well as basic aesthetical appeal a wide range of materials, technologies and processes needed to be created in order to address this demand. The goal of this unit is to first allow learners to realise the importance and impact the printing industry has on society and how it would greatly affect society as a whole without it.

It will also dive deep into the vast range of materials used in all forms of printing from paper stocks to adhesives, metal, wood, ceramics, PVCs, perspex and vinyls as well as fabrics for clothing and cloth based products and so much more. The learner will also be guided on what processes and technologies are available in order to print on the vast variety of materials avaliable be it in its raw or completed form. Learners will see traditional and modern technologies used such as silk screen, flatbed, sublimation, embroidery, 3D printing and so on.

By the end of this unit learners will be able to identify and apply the correct techniques and processes to the materials or products they would need to print on, be it paper based products, t-shirts, mugs, window stickers, packaging, bottles, etc.

Learning Outcomes

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

1. *Research the various printing techniques and processes found in the various printing sectors.*
2. *Investigate what materials and inks are available in the various printing sectors.*
3. *Demonstrate the different techniques and processes used in promotional printed.*
4. *Evaluate how new printing technologies are being utilised to solve real life situations both present and future.*

CAGPR-406-2109   3D Printing

Unit level (MQF): 4

Credits: 6

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Unit Description

3D printing technology represents a revolution in the way to work with materials. Arguably, 3D printing began in 1984, when Chuck Hull, patented his system in the United States, with the name of stereolithographic. The technology has been around for 40 years and the 3D printing technology has spread widely in the last ten years for various reasons.

This unit introduces 3D printing technologies including history and basics of 3D printing, currently available 3D printing methods and printable materials as well as current and emerging applications of 3D printing. Students will get a general idea on the major players in 3D printing industry and global effects of 3D printing. The course will be composed of both lectures and hands-on laboratory sessions, during which students will create a 3D design and print a functional prototype.

The technical part of the unit starts from the basics of 2D sketching and proceeds to give the required knowledge such that the student is able to create 3D models. Software packages that are able to generate 3D parts and also assemblies will be used. Following this, students would be also introduced to different software suits that can post-process STL files. Finally software packages that are classified as '3D print slicers' will be introduced, these enable the student to prepare the STL file for the 3D Printer.

Through a hands-on project the students will discover for themselves the potential and limitations of 3D printing. No previous knowledge is required except for a touch of creativity.

Learning Outcomes

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

1. *Create 2D sketches and perform 3D operations in a solid modelling software suite.*
2. *Retouch STL files using software suites that can perform operations on STL files.*
3. *Use slicer software settings to create gcode from STL files.*
4. *Diagnose 3D printer problems from 3D printed part symptoms*

CAGPR-412-2110   Traditional Printing Methods and Techniques

Unit level (MQF): 4

Credits: 12

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Unit Description

Printing has been around for hundreds of years. The printing industry is made up of many sectors all with their own specific methods, processes and techniques. Printing in general is used in all aspects of life for either aesthetical or functional purposes. Print is on our clothes, books, posters, instructions even the mugs we drink from. All these printing processes all started from basic processes but in time and due to innovation and demand are now far more developed and sophisticated.

This unit is catered to guiding the learner through the creation, development and innovation of various printing methods which most to this day take for granted yet are so very vital and important to our way of life. Without these printing processes there would be a huge adverse effect and impact of everyday living.

Learners will be tasked with researching and understanding a number of different printing methods such as lithography, letterpress, flexography, gravure, screen, digital and much more and how these various printing methods are used; how they begun and what innovations are being made to them to further improve these methods in order to cater for the ever changing demand.

Learners will be also expected to not only look into how these processes began and how they were improved over time to meet the needs of that time, but also to be able to see how these methods can be adapted for the future especially in the sectors of Food, Medical, Commercial, and Security. It is important not to get lost in just the technique of printing, that is, putting ink to surface but also the relevant methods employed prior to print and after.

In the fields of PrePress, Colour Management and Post Press huge strides have been made to get to where we find ourselves now and learners would be expected to recognize where these methods came from and are heading.

Learning Outcomes

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

1. *Research how traditional printing methods began and diversified throughout the history of printing all the way to present day.*
2. *Investigate how the traditional printing methods differ in their applications in regards to the different sectors of printing.*
3. *Assess how these traditional printing methods are used in today's industries.*
4. *Evaluate how the materials used determine the printing method applied.*

CAGPR-406-2105 Basic Colour Management

Unit level (MQF): 4

Credits: 6

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Unit Description

Colour is the first element that is registered when we view something for the first time. Cultural development and conditioning dictates that we will unconditionally make associations based upon the colours we see. Managing colour has always been a very time consuming and expensive procedure in the pre-press and printing industry.

The human eye fortunately is able to capture a wide spectrum of colour but unfortunately the devices we use to capture those very same colours such as cameras, monitors, printers and so on are still limited in the colours they can interpret. On top of this printers manage colour in a number of different ways where a number of additional variables further affect colour such as ink and paper used. All this confusion in colour variations meant that something had to be done in order to better control colour across the various sectors and have specific standards of colour to follow.

Thus a number of colour management principals, techniques, rules and machines where formed which are now globally used and recognised in order to achieve industry standards. Some of these tools include Colour Bars, Colour Swatch Books, Spectrometers and much more.

In this unit learners will be expected to know how to implement proper colour management techniques and procedures both in pre-press and printing process in order to control the correct colours required from screen to paper. Learners will be expected to know how to operate colour management tools as well as how colours are created digitally all the way through to print along with all the varying colour modes found in the industry ranging from CMYK to RGB, Hex, Lab and so on.

Learners will also be expected to know how to mix inks and palettes in order to obtain specific colours for specific printing processes and be able to recognise how colour is affected when placed on different surfaces ranging from paper, fabric, PVC, vinyl to wood and metal.

Learning Outcomes

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

1. *Research how colour management software's and techniques are being evolved and enhanced to cater for the advancements in the digital and offset printing industries.*
2. *Investigate the effects of how colour and ink is affected during the screen to print process on varying materials.*
3. *Demonstrate a number of colour management tools and techniques implemented during the design and printing process for a number of printing sectors.*
4. *Present and evaluate colour management processes found in the graphic and print Industry.*

CAART-406-1637 Layout Design for Print

Unit level (MQF): 4

Credits: 6
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Unit Description

Layout Design for Print, whether for information, promotional or editorial visual messages is a crucial aspect of visual communication. We are surrounded by visual communication in our everyday lives from on screen messages, publications, packaging and newsprint. Layout Design for Print production is a complex and challenging skill set incorporating grids and typography. Designers require the ability to select suitable fonts and structures to demonstrate an understanding of the elements used in the creation of a layout and why they work. This unit will give the learner an introduction to the theory of developing typographic and layout design for print.

This is a theory and practical based unit and will allow learners to demonstrate knowledge and understanding of the factors that impair and improve visual communication. Learners will develop a deeper understanding of the rules and conventions accepted in the practice within the graphic design industry.

The unit is relevant to learners wishing to further develop their knowledge of graphic design, specifically for print outcomes including corporate literature, packaging, signage and magazine spreads.

Learners will carry out evaluations of the effectiveness of the affecting factors utilised within their own design solutions and those used by others.

Finally, learners should have the underpinning knowledge and understanding of development and should feel confident to extend their experience in the design of visual communications.

Learning Outcomes

On completion of this unit the student will be able to

1. *Evaluate a range of design features in typography and layout design for print*
2. *Use appropriate terminology within typography and layout design for print*
3. *Apply the use of appropriate computer software and hardware to create typographic and layout design for print*
4. *Confidently apply document set up and export for print and present a hard copy of completed design (print) to a high quality standard.*

CAGPR-406-2106 Tactile Graphics

Unit level (MQF): 4

Credits: 6

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Unit Description

In the world of design and printing, designers and printers are often faced with challenging projects where innovations and creativity need to be taken to a higher level. One constant challenge for designers and printers is the topic of tactile graphics. Tactile graphics which also goes by the name of haptic sensory modality is basically the delivery and receival of information through other human senses focusing mainly touch. This type of graphics is usually utilizied for individuals with impairments mainly involving sight and sound.

A number of techniques and methods have been created in order to assist individuals with disabilities to be able to still receive, learn and enjoy information, art and instruction through design and printed material. Tactile graphics although unnoticed most of the time can be found in all areas of society. From hospital signs to medicine packaging, school books and maps to food packaging.

In this unit, learners will be introduced to this complex and diverse section of design and printing techniques and how they are implemented in the various industries mainly in the food, medical, security, and commercial sectors. What makes this unit unique from the others is that where for example design and printing is used for aesthetical purposes 60% of the time, tactile graphics is purely function based where information has to be transferred through touch and other methods effectively.

Learners will be shown a number designing, printing and finishing techniques which are implemented in order to create tactile graphics such as termography, Braile, embossing or debossing and much more.

Learning Outcomes

On completion of this unit the student will be able to

1. *Research tactile graphics techniques and processes.*
2. *Investigate how tactile graphics are used to aid in real life problems.*
3. *Demonstrate how tactile graphics are created using different digital to print processes found in the various sectors of design and print.*
4. *Evaluate on how the materials and inks used determine the printing method applied in relation to creating products with tactile graphic elements.*

CAGPR-406-2107 Editorial Design and Publishing

Unit level (MQF): 4

Credits: 6
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Unit Description

Editorial Design has been around for thousands of years in various forms as a means to visually communicate information to the viewer through layout, image and text. Editorial design is considered to be a subset to graphic design. This type of designing is mainly related to the creation of newspapers, magazines and books. Nowadays,due to innovation, editorial design has also entered into the digital world through online publication of all forms.

Editorial design is very important as it has a massive impact on how information is presented and delivered to the viewer and how the viewer will interpret it. An editorial designer has many factors to consider when designing, ranging from typography to layout, form, image or graphic illustrations. The goal of an editorial designer is to make his publication appealing both visually and functionally.

The purpose of this unit is to give learners a strong foundation in the different thought processes, tools and techniques editorial designers use in order to create professional level design work ready for print or digital viewing.

This unit will also delve into the industry of publishing where learners will discover the processes, techinques and machinery used to create their editorial projects. Whether it be magazines, books or newspapers the learner will realise that there is a wide variety of design, pre press, printing and post press techiniques involved in order to achieve the final project often involving fast turn around times and planning

Learning Outcomes

On completion of this unit the student will be able to

1. *Research how editorial design developed over the centuries to present day.*
2. *Investigate the various techniques, softwares and design processes that go into editorial design projects.*
3. *Demonstrate editorial designing and publishing techniques found in the various printing sectors.*
4. *Report how specific materials and inks determine the printing method applied in relation to creating various editorial designed pieces in the various printing sector.*

CAART-406-1609 Artistic Print Making

Unit level (MQF): 4

Credits: 6
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Unit Description

This unit is skills-based which will enable learners to show that they have the knowledge and skills necessary to create artistic prints using a range of printmaking processes and their associated techniques –relief, intaglio, planographic and stencil. Learners will gain the knowledge to choose appropriate tools and materials for specific techniques and the skills to use them while observing safe working practices. There is the opportunity for learners to explore, experiment with and evaluate a range of tools, materials and printmaking processes and techniques.

This unit would suit candidates who wish to learn applied printmaking skills, and explore a range of techniques and the effects of different tools, substrates and media in relation to those processes.

On completion of the unit, learners will be able to research and plan a printmaking project, understand the capabilities of certain tools, materials and techniques, create experimental prints using a range of tools, materials and techniques, and produce an edition of prints, whilst observing safe working practices.

Learning Outcomes

On completion of this unit the student will be able to

1. *Describe a range of printmaking processes*
2. *Plan a print project to a brief*
3. *Produce experimental prints using a range of printmaking techniques*
4. *Create an edition of final prints*

CAGPR-406-2108   Contextual Studies in Graphic Design and Print

Unit level (MQF): 4

Credits: 6

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Unit Description

This unit aims to equip learners with the necessary knowledge, understanding, skills and competneces to conduct research and investigate the historical development of the different processes, methods and techniques of printingmaking and printing. Learners will become familiar with traditional and non-traditional printing processes and methods. They will distinguish digital and non-digital technologies, and be familiar with major landmarks in printing. Learners will use the gained knowledge and understanding of historical and contemporary printingmaking and printing processes and be able to make use of visual methods, write about and deliver an oral presentation on the subject. They will further develop their practice in the respective specialised fields of study based on what they explore within the specific landmarks and the various historical contexts presented by their tutor.

The unit will give learners understanding of major techniques ranging from woodblock printing, to the invention of the Gutenberg moveable type, the rotary press, Linotype printing right up to digital printing. They will also understand how iconic images from the different eras throughout history have been produced in print form. The unit will give an overview of how various artists and practitioners such as Durer, Goya and Warhol among others have made use various of printing techniques across time for personal artistic expression.Learners will also be familiar with how printing has also served as a tool to distribute a fixed image or text, and used as a vehicle of information such as in the printing of posters and editorial material. Learners will differentiate between original limited editions such as relief, intaglio, silk screen and stencil print; and mass produced processes in print runs.

Learners will understand the various purposes of printing as well as gain knowledge on the variety of printable surfaces and materials that can receive print (such as textiles, glass, and plastic etc.). The unit allows learners to explore historical contexts of key events, the pioneers of printing, and understand the resulting processes taken from various social and cultural contexts. Learners will gain knowledge of the relationship between the specific technology and resulting development in the various processes of printmaking.

Learning Outcomes

On completion of this unit the student will be able to

1. *Research and record visually and textually, key historical and contemporary contexts in which printmaking and printing processes have developed.*
2. *Interpret and critique major pioneers and landmark developments in printmaking and printing visually and textually, and situate printing activity within the respective social contexts - historically and contemporary, using traditional and non-traditional methods.*
3. *Research and report specific printing related terminology, techniques, processes and materials in an organised academically appropriate format.*
4. *Undertake research and present findings in the form of a visual essay relating to specific chosen historical printing process using primary and secondary sources, digital and non-digital methods.*

For further information, please contact us on information@mcast.edu.mt