MCAST

Malta College of Arts, Science & Technology

MQF Level 6

Bachelor of Arts (Honours) in Product Design

AD6-07-19

Course Specification

Current Approved Programme Structure

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Contextual Studies in 3D Design	6
3D Modelling and Animation	6
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Commercial Model Making	12
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Total ECTS	**180**

Contextual Studies in 3D Design

Unit level (MQF): 5

Credits: 6

Unit Description

Contextual Studies is a theoretical unit that enables learners to locate their own design practice in historical and social contexts. The evolution of design practice will be explored with reference to key events, significant figures and tendencies in the history of Three-Dimensional Design.

The unit also links 3D design to other design, architectural and artistic practices. Lectures which provide introductions to the content of each aspect of the course will be accompanied by seminars, workshops, discussions and screenings, which will enable learners to consider historical developments in relation to contemporary design practice, and their own work.

The unit compliments the practical, visual components of the HD 3-D Design course by providing an arena where relevant contemporary issues can be discussed in relation to historical developments. It aims to underpin and enrich learner's visual practice by providing a secure grounding in key discourses in the evolution of design.

The analysis of specific design examples will be an important focal point, and the unit aims to deepen learners understanding of formal visual language through close examination of historical and contemporary design products.
Tasks are set throughout the unit, which are intended to deepen learner's independent research skills.

Learning Outcomes

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

1. *Present written evidence of independent research into historical developments in design.*
2. *Collaborate with others to analyse historical 3D design practice in a social context.*
3. *Demonstrate in a written case study an understanding of how visual language communicates meaning.*
4. *Communicate in writing a historically informed understanding of issues arising from contemporary design practice.*

3D Modelling and Animation

Unit level (MQF): 5

Credits: 6

Unit Description

The unit is designed to allow learners to gain an understanding of the methodology process and techniques in 3D computer modelling and animation specific for interior design and product design. The purpose of this unit is to introduce the learner to the basic techniques involved in the creation and implementation of a 3D computer model to eventually build a scene and produce an animation for a design brief. This will allow the learner the opportunity to explore a range of 3D designs, 3D model creation and manipulation as well as import from a model library and complete final renders for animation.

The learners will acquire experience by creating a 3D computer model project to a given brief. They will create objects-standard/extended geometry and shapes/splines to build a scene. The learner will import or merge relevant models from library source or 3D model internet sites specific to a 3D scene. The learner will also be able to set up camera views and produce high resolution rendering techniques for animation and export them in the relevant file format.

On completion of this unit the learner will produce a 3D computer scene to a given design brief. As well as create a rendered animation sequence saved in the relevant format and combined in post-production software.

Learning Outcomes

On completion of the unit learners should be able to:

1. *Identify how the use of 3D computer modelling and animation facilitates the product and interior design industry.*
2. *Produce a 3D model to a given design brief.*
3. *Build a 3D scene and produce an animation to a given design brief.*
4. *Produce a 3D rendered animation sequence saved in the relevant format and combined in post-production software.*

Communicating Through Computer Aided Design

Unit level (MQF): 6

Credits: 12

Unit Description

Computer Aided Design (CAD) together with image manipulation software are an important means of communicating visual information in many industry sectors, particularly engineering, manufacturing, interior design and product design. In recent years, advances in computer technology and in the software programs themselves have allowed users to create increasingly complex and realistic technical drawings, models and presentation visuals. As with many skills across the design sectors, this technology needs to be underpinned by an understanding of traditional 2D drawing and visualization techniques, as well as an understanding of the appropriate use of the technology within the scope of design projects.

Two dimensional (2D) and three dimensional (3D) CAD artwork, technical drawings and artistic visuals can be rendered and manipulated using a range of software programs, some of which can be integrated, and these visuals can be shared as digital files across computer networks. 3D CAD artwork can be rendered as photo-realistic representations, and animated to produce moving views of products and scenes.

The unit will enable learners to use CAD software programs and Image manipulation programs to produce a variety of 2D and/or 3D drawings, visuals and technical drawings. Learners will also investigate the use of CAD and image manipulation in industry, and identify the range of computer aided design software and their specific use. Learners will evaluate their own use of the technologies within their project work.

This unit has practical outcomes and is intended for delivery as part of a group award, as the learner will use CAD software and image manipulation software to create digital artwork throughout the course, the unit can be integrated into course projects in conjunction with other unit.

Learning Outcomes

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

1. *Research the use and potential of CAD and Image Manipulation software in 2D and 3D Design.*
2. *Use CAD and Image Manipulation software in a design project to produce appropriate 2D and/or 3D artwork, technical drawings and/or artistic visuals.*
3. *Present ideas and design work using 2D applications.*
4. *Evaluate the use of software programmes in a design project.*

Commercial Model Making

Unit level (MQF): 6

Credits: 6

Unit Description

The aim of this unit is to introduce learners to various tool, techniques and technologies to build scaled models specifically targeted for the Spatial and Product Design industry. Learners will develop the ability to communicate their projects through physical scaled models.

Learners will initially gain knowledge of the tools, techniques and technologies available to them, through a series of lectures and workshops on both traditional tools to produce test models and using new technologies to produce test models. The learner will also have the opportunity to produce 2D drawings and plans for the commercial production of a model in response to a given brief.

The learners test models, 2D drawings, ideas and planning stage materials will be collated to maintain a record of their development, design and communication skills. The learner will also have time to work independently in studios and workshops, and will communicate their progress through written and verbal dialogues.

Once the learner has received a given design brief or live case scenario from a client, they will have the opportunity to research and analyse the requirements of the brief. Consequently, the learner will then show a clear understanding of the planning and design process, by creating and presenting a detailed model as a finished product. The learner will show they have selected the best option from a variety of choices which they have carried forward to a final design.

Consideration will have to be given to the use of space, practicality, purpose and form as well as budget requirements and health and safety requirements. It is important that the learner is able to communicate all the stages in the production of their final model to maximise the quality of their finished work.

Finally, the learner will have the opportunity to evaluate the success of their final piece and also their progress throughout the unit.

Learning Outcomes

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

1. *Explain the technological principles of model making in a commercial context.*
2. *Plan a model for a given commercial production.*
3. *Produce test models using traditional tools and new technologies.*
4. *Produce detailed models in response to a brief by employing professional practice in commercial model making.*

Digital Visualisation and Post-Production

Unit level (MQF): 5

Credits: 6

Unit Description

In only recent times the design and production of visualisations for 3D Design was almost solely undertaken by visualisation specialists some of whom may have previously studied or been employed as 3D Designers before choosing to branch out into this area. The mass advancement and diversification of software alongside the reduction in cost of both software and hardware has led to a whole range of types of designers developing visualisation skills themselves to communicate their ideas with much greater impact and functionality directly. So much so that the majority of design courses at Colleges and Universities now include core units or modules of study concerned with the development of the skills as a core feature of the designers' toolbox.

With the extent of development of the tools used the gap between standards expected from designers and those expected by cinema going audiences is ever narrowing and photo-realism a must as standard in many visualisation applications.

This unit provides an opportunity for learners to develop crucial skills in research, design, and the full range of production of visualisations for 3D design though it specifically primarily places a keen focus on composition, materials, and lighting to develop distinctive results of a competitive standard. The most significant impact in the ability of visualisations to inform and promote can often be achieved most efficiently by focusing on the power of convincing representation of materials and lighting combined with quick manipulation of renders and combination with live action stills and footage to present filmic or cinematographic visualisations of products in context.

Learning Outcomes

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

1. *Identify and examine how 3D visualization is used in the creative industries.*
2. *Create a photorealistic visual of a 3D scene or a 3D product.*
3. *Manipulate and enhance rendered visuals using 2D post production software.*
4. *Set up and render a fly through animation.*

Visual Communication in Design

Unit level (MQF): 6

Credits: 6

Unit Description

Through this unit the learner will develop their practical and theoretical knowledge and skills in visual communication techniques by utilising various media. The unit then directs learners to apply these skills to their chosen specialism. These specialist disciplines naturally include other units covered by the Higher Diploma in 3D Design course, for example, Computer Aided Design, CGI Exhibition Design, Performance Design and Product Design. (This list may be amended to adjust to learner or program needs). The fundamental skills presented in this unit thereby underpin the design process as a whole. Through this unit learners are presented with the opportunity to build upon and refine their traditional visual communication skills, which will then be placed in context and evaluated with reference to their application to contemporary design studio practice. This unit can be used as a stand-alone resource as a point of departure for further specialist studies, while remaining integral to the Higher Diploma in 3D Design course.

Learning Outcomes

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

1. *Identify visual communication techniques.*
2. *Use various media to communicate design ideas.*
3. *Produce scaled models to develop and communicate ideas.*
4. *Present and communicate design ideas.*

Idea Generation and Development in Design

Unit level (MQF): 6

Credits: 12

Unit Description

This is a skills based unit that will allow the learner to demonstrate the necessary skills and approaches to be able to produce and communicate ideas; by developing knowledge and understanding of how to think creatively and to generate and develop ideas. Learners will use research along with the analysis and selection of gathered materials as well as carry out exploration and development of concepts. This will enable the learners to effectively present ideas and solutions to a design problem with the use of a range of visual communication techniques.

The unit is relevant to learners wishing to develop their ability to generate, express and communicate, through graphic representation and/or 3D visualizing, an awareness of the creative process from inception through exploring possibilities of a range of ideas to a final concept. On completion of the Unit learners will understand how to generate and develop ideas, and select appropriate presentation methods to communicate a chosen concept. The Unit will provide the learners with the ability to gain inspiration to generate ideas, to explore ideas using a range of media and to understand the creative process employed by designers to analyse and produce concepts for different purposes.

Learners will carry out research activities in preparation for the creation of initial ideas, concept drawings and/or sketch models. Investigations of forms, shapes, colour and textures will develop the learners' ideas exploration and ability to identify and translate initial ideas to produce a solution that can potentially be fully realised. The learner will also develop a visual language illustrated through the exploration of a variety of mixed media, as well as a visual communication proficiency that demonstrates a knowledge and understanding of what is represented in a 2D or 3D form.

Finally, learners should have the underpinning knowledge and understanding to effectively interpret and represent a design concept through the selection of appropriate media and presentation techniques to effectively present and communicate the idea.

Learning Outcomes

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

1. *Investigate a given topic to generate ideas and come up with a design solution.*
2. *Show appropriate use of different idea generation techniques throughout the design process.*
3. *Use a range of visual communication techniques to communicate and present ideas.*
4. *Evaluate critically the final creative solution.*

Critical Studies & Research Methods

Unit level (MQF): 6

Credits: 6

Unit Description

The unit is intended for use in a range of creative arts programmes and has both theoretical and practical outcomes in the form of personal research activity and the production of a proposal for a degree year dissertation.

The unit provides an overview of research theory and methodology, including primary, secondary, qualitative, and quantitative and practice led research methods. In addition to providing practical instruction on writing research proposals.

This unit also provide the learners with skills to critically analyse research findings and also see the differences between descriptive and critical writing as well as the accepted academic formats for writing essays, papers and reports using accepted academic referencing and citation systems.

In this unit, based upon lectures which present relevant content related to the creative arts theoretical contexts, learners will prepare and undertake practical activity in the preparation of a proposal for a vocationally relevant research study. Which will comprise of a planned literature review and the use of vocationally relevant methods to undertake primary research.

Learners will also undertake critical analysis of research findings and prepare written work to an accepted academic format using accepted citation and referencing. The work of the unit culminates in learners undertaking an individual self-evaluation of the effectiveness of their research processes and activity.

Learning Outcomes

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

1. *Organize the research gathered using research theory, methodology and practice led research for a potential dissertation topic*
2. *Analyse critically the findings from own research and present it in an appropriate format.*
3. *Produce in given format the research proposals in academic writing style using accepted academic referencing and citation systems.*
4. *Present orally and in writing the final proposal for a vocationally relevant research study within own area of interest in the creative arts.*

Design Principles and Methods

Unit level (MQF): 5

Credits: 12

Unit Description

This unit aims to help learners further their knowledge and skills in the development of products or services in their specialist pathway. Whilst building on the knowledge acquired through the unit 'Idea Generation and Development in Design', this unit delves more into different design strategies and methods, as well as puts more emphasis on the importance of design principles.

Through this unit, learners will gain a better understanding of the complexities of the design development cycle. The unit looks into various design methods and creative thinking techniques to aid students in the generation and implementation of ideas. Such methods will encompass the process from initial concept through to development and production. Learners will explore the stages and methodology relating to design methods and apply them to their own work. They will also be encouraged to develop an analytical and methodical approach and to use evaluation and review to develop work. Learners will be expected to apply the fundamentals of design methods and to develop individual creative strategies to produce innovative solutions.

Apart from forming a better understanding of design methods and the development cycle, this unit will enable learners to develop knowledge and understanding of the issues that have informed debate on the purposes and processes of design. Learners will develop a deeper understanding of the principles underlying art and design processes and will become more aware of how the attitudes of designers influence the appearance and function of art and design products. Furthermore, they will analyse how the context within which the designer operates is influenced by the changing values of society and the ethics of commerce.

The unit encourages learners to question the roles of form, function, culture, context and concept in relation to materials, techniques and processes, sustainability and technology along with other factors. Through this analysis, learners will be able to create connections between subjects as well as understand the impact design has on the ever changing socio-cultural context. Finally, students will be able to formulate their own distinct approach to design in order to respond to design challenges in a more individual and responsible manner.

Learning Outcomes

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

1. *Identify design principles and approaches in relation to cultural and contextual associations.*
2. *Develop own creative strategy for the development of products and spatial designs.*
3. *Develop concepts through the exploration of different design methods.*
4. *Apply good design principles to produce effective creative outcomes in response to a brief.*

Sustainable Product Design

Unit level (MQF): 5

Credits: 12

Unit Description

Interior designers play a key role in influencing the environmental and social impact of a product and can contribute positively to a sustainable future. This unit introduces learners to sustainable principles and practices in product design.

Sustainable design is concerned not only with the environment, but also with social, cultural and economic issues. This unit raises the awareness of the environmental, social, cultural and economic implications of a product designer's practice.

Throughout these course learners are introduced to tools and methods available to ensure the environmental impact of a design is carefully considered and minimised, and to promote socially responsible solutions.

Emphasis is put on the consideration of the complete lifecycle of a product proposal from raw material extraction to end of life disposal and reference is made to the 6 R's checklist. Learners will be capable of producing design solutions that not only meet the expectations of the consumer and manufacturer in terms of desirability, suitability for purpose and commercial validity, but also promote a minimal adverse effect on the environment.

Learning Outcomes

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

1. *Identify design principles and approaches in relation to cultural and contextual associations.*
2. *Develop own creative strategy for the development of products and spatial designs.*
3. *Develop concepts through the exploration of different design methods.*
4. *Apply good design principles to produce effective creative outcomes in response to a brief.*

Product Design

Unit level (MQF): 5

Credits: 12

Unit Description

The Unit is designed to allow learners to gain an understanding of product design from the inception of initial ideas to creating a prototype of the product.

The purpose is to introduce the learner to the design principles of product design and to create the drawings using a variety of techniques. It will allow the learner the opportunity to explore a variety of drawings to create visuals and a final prototype of the product.

The Learners will acquire experience by researching the design principles of product design and exploring ideas through developmental drawing, creating visuals for the product and finally a well design prototype of the product. The student should have the relevant knowledge of materials for the prototype model and acknowledge an understanding about sustainability when creating the product.

On completion of this unit the student will be able to produce a three-dimensional product design that has taken into consideration the design principles.

Finally, learners should have the underpinning knowledge and understanding of Product Design.

Learning Outcomes

On completion of the Unit learners should be able to:

1. *Explain the design principles of Product Design.*
2. *Create drawings for product design concepts using a variety of techniques.*
3. *Produce finished product design visuals and prototype.*
4. *Evaluate the complete design cycle of a range of products.*

Properties of 3D Materials & Production Processes

Unit level (MQF): 5

Credits: 6

Unit Description

Designers and practitioners use an extensive array of materials, processes and techniques during their work, combining both traditional finishes and modern techniques. Contemporary methods in innovative design and the constant development of these processes have brought opportunities to make progress in the creative processes. In this unit, learners will be encouraged to explore the use of these materials and processes throughout their solution to given tasks. Learners will be able to show an understanding of the materials and production processes in their developmental and finished work, and to propose the use of appropriate material, processes and techniques. Learners will themselves be making use of such materials and production processes in order to produce appropriate test pieces and final outcome as defined in the given brief.

Learners will then be able to make evaluations of the differing qualities, materials and techniques. They will learn to review their findings throughout the different stages of the design process in a critical format in order that they can propose / make modifications and refinements to their work as it develops, culminating in a presentation of materials and finishes which fulfils the requirements of a design brief.

Upon completion of this Unit the learners will have developed knowledge and a detailed understanding of 3D materials together with the processes that are available to fulfil a three dimensional design solution. Throughout this unit learners will be encouraged to develop the ability to source and identify suitable materials and finishes in order to fulfil a brief or associated tasks, as well as developing an understanding of their correct usage and the production processes associated with their chosen subject of three dimensional design.

Learning Outcomes

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

1. *Understand the characteristics of 3D materials and production processes used in design.*
2. *Investigate 3D materials and processes in a safe manner.*
3. *Select and use appropriate materials together with techniques and processes in a given 3D Design brief.*
4. *Evaluate the suitability of the materials and processes used in own 3D Design.*

3D Technologies in Materials and Production Processes

Unit level (MQF): 6

Credits: 6

Unit Description

The aim of this unit is to expand the learners' knowledge of materials to include specialist materials such as Corian and translucent concrete. Learners will also have the opportunity to expand their knowledge in a range of production processes, such as rapid prototyping, laser cutting, CNC milling and injection moulding.

In this unit the learners will gain experience in working to a brief and developing their own design work in response to that brief. Their designs, ideas, sketches and prototypes throughout the planning and design stage will be collated and maintained as a record of their development. Therefore, the learners will have continual opportunities for them to evaluate their own work.

In addition, the learner will be able to familiarise themselves with specialist materials and production processes in a combination of lecturers, workshops, tutorials and independent study and workshop time. Within this time, they will communicate and evaluate their progress through written and verbal dialogues.

When the learners have received their brief, they will have the opportunity to research and analyse the requirements of the brief and show a clear understanding of the specialist materials and appropriate production processes they require. The learners will show that they have selected the best option from a variety of choices and show an understanding of why they have carried this forward to a final design.

Finally, the learners will have the opportunity to evaluate the success of their final piece and also their progress throughout the unit.

Learning Outcomes

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

1. *Understand the characteristics of a variety of specialist materials within design work.*
2. *Understand the production processes to produce design work.*
3. *Produce a final piece using specialist materials and production processes.*
4. *Evaluate own finalised piece to determine future improvements.*

Functional Design

Unit level (MQF): 5

Credits: 6

Unit Description

Functional design is a cross-disciplinary activity within the creative industries. Its application, however, is interdisciplinary across all industries and everyday life. Functional design is essentially about creating a product, system, or service of which the form, mechanisms, and ergonomics are fit for purpose and correspond perfectly with the product's function. Compromising a product's function is an important consideration when the designer is forming the product's aesthetic appeal. The designer has to consider the collaborative relationship these two entities. Two other considerations for the designer is the durability of the product, and the experience of the user.

This unit will enable learners to understand the relationship between the needs of users and functional design through self-directed research and experimentation. This visual experimentation will inform their design decisions and final outcomes. Learners will also, through research, understand related themes including: the relationship between form and function; cultural and social tastes; ergonomics; inclusivity and usability issues; UX; constraints of materials and processes; and health & safety issues.

Engaging with this unit will give the learner opportunity to build on their knowledge of the quality and constraints of materials, tools, processes, and techniques, and to apply that knowledge by making judicious decisions. This unit allows the learner to test, make safe mistakes, learn from them, correct them, and review and evaluate. This learning experience must be recorded. At the end of the unit the learner will be able to confidently explain and demonstrate their knowledge and understanding of functional design, and will be able to produce a functional design product competently. This unit can be integrated with other units.

Learning Outcomes

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

1. *Conduct research on the relationship and reciprocal compromises between style and utility within functional design.*
2. *Develop and produce a functional design product.*
3. *Outline the principles of User Experience within functional design.*
4. *Present the design process to an audience.*

Exhibition Design

Unit level (MQF): 6

Credits: 6

Unit Description

In this unit learners will develop a spatial awareness which will enable them to produce effective design solutions for exhibition design contexts. They will develop a level of competence in controlling the creative process from inception to design realisation culminating in the production of work suitable for presentation. Learners will be expected to develop and acquire the ability to communicate ideas through 2D drawing techniques, 3D modelling and prototyping skills thus allowing learners to demonstrate their ability to plan and propose to a client presentation.

The Unit will enable learners to develop a brief, plan an exhibition installation, create a design presentation and produce working drawings including the required details and specifications. Learners will be encouraged to work systematically and efficiently in planning their own work schedules, to manage their time to meet deadlines set by project briefs and individual tasks in order to achieve successful completion of this unit.

Learners will need to engage in integrated research to include analysis of the brief, preparation of initial ideas to access and disseminate information and have an understanding of legal requirements relating to the exhibition industry. Investigation should be undertaken into suitable materials, processes and techniques. Learners will need to explore the visual and tactile properties and characteristics of materials appropriate to exhibition design. They will also need to investigate contexts and demonstrate the ability to select and interpret research information through design development leading to completion of work.

Learning Outcomes

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

1. *Research and investigate exhibition design spaces in relation to a given context.*
2. *Develop a design idea to address the exhibition design requirements.*
3. *Present a finalised design solution for an exhibition space in response to a brief.*
4. *Evaluate the effectiveness of own design proposal.*

Professional Practice in 3D Design

Unit level (MQF): 6

Credits: 6

Unit Description

This unit is designed to allow learners to identify career opportunities available, help them develop and establish their career goals and to explore the relevant opportunities in their chosen area of design.

The initial stages of this unit will aid learners to further develop self-awareness and critical thinking skills. Learners will engage in self-reflection and critically evaluate own work in order to identify skills and competences, both design related as well as transversal/transferable ones. Such reflections will aid learners to identify their preferred career path as well as aid them to select and develop a collective body of personal design work that highlights their personal learning achievements and accomplishments.

Learners will ultimately develop a unique design identity through a range of self-promotional material, amongst which, they will produce a design portfolio for both print and screen. Such material is necessary to promote themselves as fully qualified and eligible professionals in their specialised design discipline. The selection of work should be critically analysed and evaluated in order to produce a well-curated design portfolio that is relevant to the learner's chosen career.

Through this unit, learners will learn to identify and develop interpersonal skills in relation to personal career goals. On completion of this unit, learners will also experience career interview techniques in preparation for real life opportunities within their specialised field.

Learning Outcomes

On completion of the unit learners should be able to:

1. *Research career opportunities and establish own career goals.*
2. *Develop a unique design identity through a range of self-promotional material.*
3. *Produce a professional design portfolio that reflects career goals.*
4. *Use appropriate interview techniques to apply and sit for an interview.*

Project Management

Unit level (MQF): 6

Credits: 6

Unit Description

Project management is a service which facilitates a designed intention to satisfy consumers. Knowing the full design development process and all its complexities allows the learner to visualize the entire process of a design. Project managers are proving that their competences determine the success of a design. Effective, efficient and clear communication between several stakeholders, time management, task management, surveying of works, are all roles that a project manager must undergo. Designers are not often in charge of the manufacturing and distribution of their work but once one is aware of such a framework he or she has the opportunity to manage their own work and design with manufacturing possibilities in mind. It is a job that demands a person to be very skilful in related fields, know of several companies and individuals who can collaborate in the realization of projects and most importantly be extremely efficient. Project managers improve their 'modus-operandi' with every project but every project is very uniquely challenging.

In this unit learners will get a taste of what a project manager does and try to come up with one's own project management plan. They will be exposed to scenarios and given the opportunity to exercise problem solving and organization, keeping in mind circumstances that can set the development off course. Learners are encouraged to investigate processes and learn terminology and applications related to their field of design specialization.

Learning Outcomes

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

1. *Identify different design projects and outline their life cycle.*
2. *Outline the job role of a project manager in the light of a particular case study in own field of design specialisation.*
3. *Present own project management plan of a complete design project.*
4. *Compile all documentation in a professional manner and evaluate own strengths and weaknesses as a potential project manager.*

History and Theory of Industrial Design

Unit level (MQF): 6

Credits: 6

Unit Description

In this unit learners will be introduced to the history of industrial design with emphasis from World War 2 to contemporary design. These periods of industrial design will be investigated from a technological, cultural, economic and ecological background. This will be beneficial for learners since learning the origins of a profession or process helps respect the form and purpose of objects and thus enrich one's theoretical and visual knowledge.

This unit will make learners aware of the role of the industrial designers whilst understanding their possibilities and restrictions. They will be presented with a visual array of designs that might influence or stimulate creative thinking. Learners will understand how and why some products were made and function in the way they do. In addition, they will also understand how industrial designers managed to be fruitful in the period they were living in.

Learning Outcomes

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

1. *Outline the history of industrial design with emphasis on post-war design to contemporary design.*
2. *Identify the technological, cultural, economic and ecologic factors that effected certain industrial design periods.*
3. *Determine the theoretical discoveries that emerged during each period in the history of industrial design.*
4. *Discuss the role of the contemporary industrial designer in relation to the future of industrial design development.*

Open Project in 3D Design

Unit level (MQF): 6

Credits: 6

Unit Description

Design scholars investigate areas of design that when implemented improve our lifestyle. Arriving to identifying aspects that require investigation is as crucial to the success of a design as the actual solution. In this unit one will investigate and come up with a hypothesis, draw out a plan to further carry out such research, compile appropriate and sufficient research, plan, organize and manage this self-initiated project.

The learner will be supervised by a lecturer to identify appropriate research, explain their intensions and pose a statement. They will be guided and encouraged to write out a design brief and later identify design strategies that will help them address and validate their hypothesis with a design. Finally, they will come up with a design proposal on the basis of their hypothesis and in light of their research. Throughout this unit learners will be mainly guided to be selective, organised and factual.

Learning Outcomes

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

1. *Evaluate the chosen research question and form a hypothesis.*
2. *Draw out a design brief for the hypotheses being investigated.*
3. *Identify own design strategy for the completion of a design.*
4. *Use findings to propose an initial design.*

Design for Need

Unit level (MQF): 6

Credits: 6

Unit Description

Culture is one of the most important aspects of our everyday lives, and it undeniably plays an important role in the design field. Designers' own cultural values play a primary role in influencing the design of the product. Thus the importance of studying culture is shown repeatedly in several studies in all areas of design.

This unit focuses on the analysis of cultural meaning and influences on design development. Some products are aimed at different cultures and countries. A product acceptable in one culture may be looked upon as offensive or less desirable in another. This unit introduces design discourse as a framework by which changes in design practice might be better understood. The unit will detail a number of contexts in order to examine the possible relationships between form and meaning. Through an analysis of the production and consumption of specific objects, materials and environments, and with the aid of key texts to develop an appreciation of both historical and theoretical practices is given. In addition, an account will be given of the rapport between social, cultural and economic determinants and the values to be found within a variety of creative practices. Learners will be studying and analysing various aspects of design in relation to the social, cultural and economic environments and applying these findings to their own designs.

Learning Outcomes

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

1. *Understand the social and environmental meaning and influences of product design.*
2. *Propose solutions for a need identified within a social framework.*
3. *Illustrate the design cycle for the proposed design.*
4. *Evaluate own design and possible social, cultural and environmental effects.*

Emotional Design

Unit level (MQF): 6

Credits: 6

Unit Description

Although this unit can be taught as a standalone unit, Emotional Design is designed to complement the unit titled 'Functional Design'. It is intended to instil methods of design that go beyond the basic practical functions of products and focus on the hidden meanings and values of a product.

This unit will focus on three important aspects that add an emotional level to any design. Learners will value and consider the **Visceral** aspect, which refers to the initial impact of a product based on its appearance, the **Behavioural** aspect related to the feel and the total experience of using a product, and the **Reflective** perspective which is about how it makes one feel, the image it portrays and the message it tells others about the owner's taste.

In this unit learner can design a variety of products including, wearable, decorative, and usable products. Whilst function, truth to material and production processes will remain essential, the learners will also be expected to design a product which evokes emotions in the user and integrate personality, interaction, surprise, fun along with other factors.

Learning Outcomes

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

1. *Conduct research on a target audience to determine and explore requisites for the design brief.*
2. *Develop ideas which address various emotional and practical needs of the user.*
3. *Communicate effectively the product design with a variety of stakeholders.*
4. *Evaluate own work and test its effectiveness.*