MCAST

MQF Level 4

AE4-A2-21

Advanced Diploma in Joinery, Furniture Design and Manufacturing

Course Specification

Course Description

This diploma course comprises theoretical knowledge and extended practical training both off-the-job and on-the job as part of an apprenticeship or work placement. Students will learn how to analyse and provide solutions to typical joinery and furniture products using solid wood and composites. The practical training is carried out in workshops equipped to industry standards. Students will be expected to participate individually and in teams to produce solid wood and composite materials products.

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. *Organise to manufacture batched interim products out of solid wood and composite materials;*
3. *Take off dimensions from drawings to calculate cost, nest and prepare cutting lists;*
4. *Perform site setting out to assemble complex products.*

Entry Requirements

- MCAST Diploma in Joinery and Furniture Making
- Or MCAST Diploma in Construction Engineering
- Or MCAST Diploma in Automotive Repair (Body and Paint)
- Or 4 SEC/O-Level/SSC&P (Level 3) passes
- Preferred: English, Mathematics, Technical Drawing, Engineering Technology, Graphical Communication.

Current Approved Programme Structure

Unit Code	Unit Title	ECVET	Year
ETFRN-406-1501	Setting out and Calculations	6	2
ETFRN-406-1502	Technical Design and Drawing	6	1
ETFRN-406-1503	Hand and Power Tools	6	1
ETFRN-406-1504	Woodworking Machinery-Technology and Practice	6	2
ETFRN-406-1505	Advanced Practical Skills	6	3
ETFRN-406-1506	Planned Machine Maintenance-Technology and Practice	6	3
ETPAM-406-1501	Planning and Administration	6	2
ETFRN-406-1507	Materials-Timber and Manufactured Board	6	1
ETH&S-406-1503	Health and Safety at Work	6	2
ETFRN-406-1508	Timber Technology and Preservation	6	2
ETFRN-406-1509	Computer Aided Manufacturing-Technology and Practice	6	3
ETCDN-406-1601	Vocational Computer Aided Drafting and Design (2D)	6	1
ETFRN-406-1511	Furniture Design and Contemporary Materials	6	2
ETPRJ-412-1506	Synoptic Project-Joinery and Furniture Making	12	3
ETFRN-406-1512	Alteration and Repair-Technology and Practice	6	1
CDKSK-406-2007	Mathematics	6	1
CDKSK-406-2001	English	6	1
CDKSK-404-1915	Employability and Entrepreneurial Skills	4	2
CDKSK-402-2104	Community Social Responsibility	2	2
VCAPP-406-1601	Vocational Competences : Apprenticeship in Joinery, Furniture Design and Manufacturing	6	1/2/3
	Total ECVET/ECTS	**120**	

Unit: ETFRN-406-1501 Setting out and Calculations

Unit level (MQF): 4

Credits : 6

Unit description

The purpose of this unit is to understand and interpret initial information provided regarding specified joinery and furniture products. Also, to set out and produce a range of workshop drawings and mark out a range of workshop rods and templates appropriate to this level. Learners will be assessed on accuracy in setting out a number of height and width rods or templates, together with producing an accurate cutting list, which relates to the specified joinery constructions. From these templates and rods a number of specified joinery and furniture products will be constructed given suitable guidance within the production facility.

They should also develop knowledge and understanding in calculating wastage factors, and an understanding of cubic and lineal metreage. It should also develop learners' IT, Communication and numeracy when calculating and producing cutting lists and costing.

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. In the context of the safe use of relevant hand tools and machines and in the actual techniques involved 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 accuracy, efficiency and safety have been satisfactorily addressed.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Interpret technical information relating to the work and resources when producing setting out details for joinery and furniture products;*
2. *Use suitable equipment and tools, required for the methods of work to produce setting out details for joinery and furniture products;*
3. *Demonstrate satisfactory setting out details and cutting lists for joinery and furniture products;*
4. *Assess the cost of materials and wastage factors, when producing joinery and furniture products;*
5. *Demonstrate satisfactory marking out of timber components from setting out details for joinery and furniture products.*

Unit: ETFRN-406-1502 Technical Design and Drawing

Unit level (MQF): 4

Credits : 6

Unit description

The purpose of this unit is to understand drawings for plane, orthographic and 3-dimesional views in conjunction with scale and layout. Then apply this understanding to the production of scale drawings of specified joinery products / components.

Learners will be assessed on accuracy in the drawings produced, relating to scale, technical content, format and clarity. In respect to both initial drawing practice and views, but also in the context of the workshop drawings/rods produced.

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. In the context of the safe use of relevant equipment and resources and in the actual techniques involved within the various stages of the unit requirements.

The specific objectives of this unit are that the learner undertakes a logical /correct sequence to this and similar tasks. All relevant issues, such as accuracy and correct drawing practice will be satisfactorily addressed.

The unit will ensure that learners start from a strong understanding of drawing principles that will be specifically applied within the relevant working environment. The level of competence gained within this unit will aid comprehension and learning in other associated units within this course provision.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Interpret a range of symbols and abbreviations used in construction drawings as per relevant EN standards;*
2. *Set out and draw to scale plane figures;*
3. *Draw orthographic projections to scale;*
4. *Draw three dimensional views to scale.*

Unit: ETFRN-406-1503 Hand and Power Tools

Unit level (MQF): 4

Credits : 6

Unit description

Through this unit, the learner will learn how to use powered equipment. Before starting working with any kind of power tool, the learner will learn about its potential uses and be able to describe different aspects of the tool — how it works, what it is used for, how the moving parts work etc.

It is important that he will know about the relevant Health and Safety legislation which applies to using tools of this type. He will also learn how to research aspects of health and safety and will be asked to apply research to machines which will be working on. An important aspect of workshop practice is risk assessment and the learner will write risk assessments as part of his assessment.

Power tools often use jigs and templates and the learner will learn how to design a jig or template and demonstrate its use. He will have to think about health and safety implications and will have to bear in mind the speed and accuracy of operator use when designing the jig or template. He will have to demonstrate the jig or template in use.

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. In the context of the safe use of relevant hand tools and power tools and in the actual techniques involved 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 accuracy, efficiency and safety have been satisfactorily addressed.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Describe and use Hand Tools to prepare Timber Joints, Components and Products;*
2. *Describe and use Power Tools to prepare Timber Joints, Components and Products;*
3. *Produce and Jigs and Templates;*
4. *Interpret and apply current health and safety regulations and requirements.*

Unit: ETFRN-406-1504 Woodworking Machinery - Technology and Practice

Unit level (MQF): 4

Credits : 6

Unit description

This unit is designed to further develop the learners' knowledge and understanding in the various types of machinery which are commonly used within the woodworking industry. During the delivery of this Unit the learner will be introduced to the machines that they will use when manufacturing piece part components.

The learners should become familiar with the machines and learn the safe set up and operation of a range of machinery, through classroom lessons and practical demonstrations.

Learners should also be introduced to the correct types of tooling and cutting agents in relation to materials being machined.

It is vital when delivering this unit that close attention is given to current health and safety requirements, and safe working practices are followed in the workshop.

The aim of this Unit is for the learner to gain confidence in using machines safely and accurately to assist with their progression within the course.

Progression through this Unit, should not only develop skills in dealing with different types of machinery, but should also develop learners' IT, Communication and Problem Solving skills.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Describe the function of a range of woodworking machinery;*
2. *Identify a range of tooling and cutting agents;*
3. *Demonstrate the safe use of a range of woodworking machinery.*

Unit: ETFRN-406-1505 Advanced Practical Skills

Unit level (MQF): 4

Credits : 6

Unit description

The learner should be introduced to all relevant machinery components, tooling and ancillary equipment. This information could be used to enable the candidate to develop their knowledge and understanding of window and screen manufacture and safe working practices which will be enhanced through classroom teaching with the use of visual aids, electronic presentations, DVD's, e-learning, reference books, classroom exercises, group discussions and site visits where appropriate. The function of each component should be thoroughly demonstrated. Safe working practice methods should be demonstrated by learners showing good technique in the setting and safe operation of machinery. This teaching approach should help ensure the candidate acquires the underpinning knowledge required for the unit.

Evidence will be gathered through a combination of written and/or oral evidence of knowledge and understanding and observation that the learners have met the given standards and tolerances during the practical assessment.

Learners will be required to demonstrate their knowledge through questions relating to the identification of various specialist woodworking machines, their functions and components, window components, joints and manufacturing methods.

Where available, evidence from the workplace can be incorporated to enhance the Outcomes, provided that this evidence is appropriate and authenticated as the candidate's own work. It is the responsibility of the centre to satisfy themselves that the portfolio of evidence submitted for assessment is entirely original and solely the respective candidate's work.

This unit has been designed to develop the learner's knowledge and understanding to enable them to use a range of specialised woodworking machines using advanced techniques. The successful completion of this Unit should enable the candidate to set up and operate specialist sawing machines after outlining design details of a range of machines used in the manufacture of timber framed components.

Where feasible, centres should also incorporate modern machining methods, tooling, equipment and materials used within the Machine Woodworking industry. Learners should be made aware of current industry practice and emerging practice or technology which may become conventional in the future.

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. In the context of the safe use of relevant hand tools and machines and in the actual techniques involved 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 accuracy, efficiency and safety have been satisfactorily addressed.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Safely set up and use a range of machines for the manufacture of complex components;*
2. *Demonstrate knowledge and understanding of complex frames and products;*
3. *Install components, frames and products.*

Unit: ETFRN-406-1506 Planned Machine Maintenance - Technology and Practice

Unit level (MQF): 4

Credits : 6

Unit description

The purpose of this unit is to understand and interpret initial information provided regarding the planned maintenance of machinery used in the manufacture of furniture components. Learners will be required to gain the underpinning knowledge relating to the necessary procedures and documentation required for the planned maintenance of equipment and tooling.

These processes should be planned in such a manner that it takes into account issues such as, manufacturers' warranties, service lives of components and efficiency of operation.

Tasks to be undertaken as part of this unit should address a range of machines commonly used within this sector, but acknowledge the differences between in-house and manufacture service / repair requirements.

Along with the above information, all work will be carried out in a safe and efficient manner compliant with current industry standards and practice. In the context of the safe use of machines and in the actual techniques involved 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 work and similar tasks and that all relevant issues, such as accuracy, efficiency and safety have been satisfactorily addressed.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Compile maintenance schedules for machines;*
2. *Comply with the given, relevant legislation and official guidance to carry out your work;*
3. *Interpret the given information to the work and resources to confirm its relevance;*
4. *Comply with the given information to carry out the work efficiently to the required specification;*
5. *Understand the purpose of the maintenance programme for the work to be carried out in the allocated time and why deadlines are kept;*
6. *Maintain safe working practices at all times.*

Unit: ETPAM-406-1501 Planning and Administration

Unit level (MQF): 4

Credits : 6

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 Building Environment;*
2. *Identify and understand how to apply information sources in the Built Environment;*
3. *Communicate with other persons within the Built Environment;*
4. *Apply the correct Planning and Administration methods within a working environment.*

Unit: ETFRN-406-1507 Materials - Timber and Manufactured Boards

Unit level (MQF): 4

Credits : 6

Unit description

This unit is designed to provide the learner with the knowledge and understanding of the materials that are used in the in manufacture of modern and traditional furniture. The materials will include timber-based products and manufactured board materials.

The learner will also gain knowledge and understanding of the differences between hardwood and softwood, how they grow, conversion methods, seasoning process, and various properties when placed in varying environmental conditions, (interior and exterior).

The learner should also be introduced to the various defects found within timber and their causes, including natural, drying and storage.

The learner should also gain knowledge and understanding of the production methods, materials and bonding agents used in the manufacture of composite boards and their uses within the furniture industry.

The learner should be familiar with the standard section sizes of timber and board materials available. They should also become more aware of the varying types of adhesives, abrasives and fixings including nails and screws commonly utilised within the joinery and furniture industries.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Describe the main types of timber commonly used in furniture production;*
2. *Outline the characteristic differences between the main timber species [Softwoods/hardwoods];*
3. *Identify commonly used manufactured timber composite board forms;*
4. *Outline the veneers and adhesives commonly used in the manufacture of timber composite board forms;*
5. *Identify the main uses of various types of fixings;*
6. *Identify adhesives and explain their uses;*
7. *Outline the various abrasives commonly used within the furniture and joinery industry.*

Unit: ETH&S-406-1503 Health and Safety at Work

Unit level (MQF): 4

Credits : 6

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.*

Unit: ETFRN-406-1508 Timber Technology and Preservation

Unit level (MQF): 4

Credits : 6

Unit description

The purpose of this unit is to understand the structure of timber and the importance of moisture to the durability of the material. Common wood destroying fungus and beetles/insects affecting timber will be identified and explained. The various preservatives and their application to eradicate such problems will also be addressed within the unit.

Learners will be assessed on accuracy in the correct identification of relevant items in each of the aforementioned areas related to timber structure and its relationship to moisture content. And in the suitable explanation of the preventative / remedial mediums that can be employed to alleviate decay problems experienced in timber.

In unison 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 the safe use of relevant equipment and resources involved in any 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 timber structure [identification and differences], moisture and timber durability, decay mechanisms, preservatives types and application methods have been satisfactorily addressed.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Identify the structure of timber and the importance of moisture content;*
2. *Explain the decay of timber and the mechanisms involved;*
3. *State the main types of wood preservatives and insecticides commonly employed based on their technical properties;*
4. *Evaluate the different methods of application of preservatives and insecticides to timber;*
5. *Explain natural and artificial defects of converted timber.*

Unit: ETFRN-406-1509 Computer Aided Manufacturing - Technology and Practice

Unit level (MQF): 4

Credits : 6

Unit description

This unit has been designed to provide the learner the knowledge and skills that will enable them to understand the fundamentals of CNC programming and machining and also introduce them to Computer Aided Part Programming.

During delivery of this unit it is important that fundamentals of CNC systems, including component holding devices, Feed speeds, G and M codes, absolute and incremental coding, zero shifts, linear and sub programming, XYZ coordinates and how the systems operate, are explained before the learner has an opportunity to apply these fundamentals in the programming and manufacture of a given component.

This knowledge should be complemented by an introduction to the capabilities of Computer Aided Part Programming, through classroom lessons and practical demonstrations, culminating in the learner taking a given design from drawing and development through to CNC part program generation.

A suitable CAD/CAM system should be used and learners should be fully aware of the capabilities of the software before any assessment should take place.

The specific objectives for this unit are that the candidate can demonstrate knowledge and understanding of the use of computer numerical control machinery in the furniture industry for the production of multiple or bespoke products for the industry.

Progression through this unit, not only should develop skills in CNC practices within the furniture industry, but should also develop learners' IT, Communication and Problem Solving skills.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Describe CNC systems with respect woodworking industrial requirements;*
2. *Demonstrate programming skills to manufacture or simulate a component part;*
3. *Edit a CNC program.*

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

Unit level (MQF): 4

Credits : 6

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.*

Unit: ETFRN-406-1511 Furniture Design and Contemporary Materials

Unit level (MQF): 4

Credits : 6

Unit description

The intention of this unit is to allow learners to gain knowledge, confidence and develop awareness of the processes involved in the Design of Furniture and identify contemporary materials. The unit focuses on identifying, examining, evaluating and comparing two contemporary furniture designs, the materials used and the designers associated with the piece.

Having an awareness of contemporary design and materials is essential for learners to enrich their own work as well as giving them the confidence to create a dialogue with potential clients, employers or other stakeholders, ultimately adding to the student's communication, entrepreneurship and cultural understandings. Learners will also develop good research skills, which is of great importance in today's multidisciplinary design environment.

The unit also emphases the development of accurate research skills through identifying, sourcing, gathering, interpreting, organizing, developing, documenting, recording and referencing information through comparing contemporary furniture designs, the technological advances in materials and the subsequent manufacturing techniques involved. It would be highly advantageous for consideration to be given to research methodologies and approaches.

Learners should be encouraged to research many contemporary furniture designs and the materials used before settling on two pieces of furniture to research further. The final outcome for this unit will be in the presentation of a well-organised document with illustrations containing all collated information and a 1000-word report highlighting two contemporary designs and a discussion on the materials used in the pieces. Within this document, learners will conduct a final personal self-assessment identifying particular strengths or weaknesses they have identified during the unit and areas for future development. Understanding the current health and safety legislation and safe working practices must be employed at all times.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Identify and research a range of contemporary furniture design, materials and associated designers;*
2. *Describe the key factors in the development of two contemporary furniture designs and their materials;*
3. *Collate, organise and present all sourced knowledge and data;*
4. *Describe the principles of designing for visual attractiveness.*

Unit: ETPRJ-412-1506 Synoptic Project - Joinery and Furniture Making

Unit level (MQF): 4

Credits : 12

Unit description

This unit is designed to assess the learner's ability to integrate the knowledge and skills developed throughout the whole programme and in particular will prepare learners for progression to level 5 courses

Learners will be given an Industry Relevant Case Study that can be designed by MCAST or with industry. Links with the Furniture manufacturers would therefore be particularly useful to students undertaking this Unit and MCAST should be encouraged to develop links to facilitate this.

Learners will be assessed on all aspects of the unit, planning and costing, quality of workmanship and evaluation of the project.

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. In the context of the safe use of relevant hand tools and machines and in the actual techniques involved within the various stages of the unit requirements.

Progression through this Unit, should not only further develop knowledge of the manufacturing techniques and practical skills utilised within the furniture industry, when reproducing an item of furniture, but should also further develop learners' IT, communication and numeracy, when calculating and producing cutting lists and costings.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Interpret the brief;*
2. *Research and analyse an item of timber based furniture for reproduction;*
3. *Produce a manufacturing schedule;*
4. *Manufacture an item of timber based furniture;*
5. *Evaluate the process.*

Unit: ETFRN-406-1512 Alteration and Repair - Technology and Practice

Unit level (MQF): 4

Credits : 6

Unit description

This unit provides a framework for learners to gain confidence, knowledge and hands on experience in the many faceted and complex vocation of alteration and repairing of furniture and joinery products. The aim of the unit is for learners to successfully achieve key competences in a range of techniques commonly employed in the alteration and repair of furniture as well as enhancing their communication and managerial proficiencies.

Learners will learn about the methods employed to separate components and structures and to allow for full reconstitution of the original structure, create a production plan and note the sequence of operations, provide a materials list, give consideration to the properties of joint reconstitution and component repair whilst ensuring framework rigidity, gain an appreciation of the constructional and aesthetic limitations of alteration and repair, consider the fitness for purpose of materials, understand the different methods of repairing and restoring timber furniture surfaces and acquire the skills to reconstitute areas around the attachment of common fitments such as locks, hinges and catches. Learners will learn about the methods employed to service, clean and change the handing of a mortise lock, splice a new section into a door style, remove and replace a door panel and insert new sections into a door surface following the relocation of ironmongery.

The final outcome should be presented in two parts; part one by the way of a written piece of work that illustrates the journey taken to produce a final piece of alteration and repair work and part two an example of a hands on practical application of alteration and repair.

Recording the processes involved is important and learners should be encouraged to photograph each step taken to produce a final piece of work, written evidence describing the journey taken and historical and ethical implications of alteration and repair should be included.

Understanding the current health and safety legislation and safe working practices must be employed at all times.

Learning Outcomes

On completion of this unit learners should be able to:

1. *Prepare a production plan and a materials list for the alteration and repair of furniture and joinery products;*
2. *Plan and demonstrate carcass alteration and repair techniques;*
3. *Plan and demonstrate surface and fitting repair and restoration techniques.*