



Level 3 Advanced Technical Diploma in Site Carpentry (450) (7906-30)

Version 1.3 (May 2019)

Qualification Handbook Technicals

Qualification at a glance

Industry area	Construction
City & Guilds qualification number	7906-30
Age group	16-19 (Key Stage 5), 19+
Entry requirements	Centres must ensure that any prerequisites stated in the <i>What is this qualification about?</i> section are met.
Assessment	To gain this qualification, candidates must successfully achieve the following assessments: <ul style="list-style-type: none"> one externally set, externally moderated assignment one externally set, externally marked exam, sat under examination conditions.
Additional requirements to gain this qualification	Employer involvement in the delivery and/or assessment of this qualification is essential for all candidates and will be externally quality assured.
Grading	This qualification is graded Pass/Merit/Distinction/Distinction* For more information on grading, please see Section 7: Grading.
Approvals	These qualifications require full centre and qualification approval.
Support materials	Sample assessments Guidance for delivery Guidance on use of marking grids
Registration and certification	Registration and certification of this qualification is through the Walled Garden, and is subject to end dates.
External quality assurance	This qualification is externally quality assured by City & Guilds, and its internally marked assignments are subject to external moderation. There is no direct claim status available for this qualification.

Title and level	GLH	TQT	City & Guilds qualification number	Ofqual accreditation number
Level 3 Advanced Technical Diploma in Site Carpentry (450)	450	720	7906-30	601/7418/3

Version and date	Change detail	Section
V1.1 May 2016	Small typographical errors	Throughout
	TQT added for qualifications Assessment component titles amended	1. Introduction
	Employer involvement guidance updated throughout	4. Employer involvement
	Summary of assessment methods and conditions	5. Assessment
	Moderation and standardisation of assessment updated throughout	6. Moderation and standardisation of assessment
	Awarding individual assessments Awarding grades and reporting results	7. Grading
	Enquiries about results Re-sits and shelf-life of assessment results Malpractice Access arrangements and special consideration	8. Administration
V1.2 June 2017	Addition of the examination paper based module number	1. Introduction – Assessment requirements and employer involvement 5. Assessment 5. Assessment – exam Specification 7. Grading – Awarding grades and reporting results
	Removal of AO 6-8 from Synoptic Assignments	5. Assessment – Assessment Objectives
	Addition of Provisional Grade Boundaries for the Synoptic Assignment	7. Grading
	Revised Exam Specification and AO weightings	5. Assessment – Exam Specification
	Branding Changes	Throughout
1.3 May 2019	Wording changed regarding retakes	5. Assessment – Summary of assessment methods and conditions
		8. Administration – Re-sits and shelf-life of assessment results

Contents

1	Introduction	6
	What is this qualification about?	6
	Qualification structure	8
	Total qualification time (TQT)	8
	Assessment requirements and employer involvement	9
2	Centre requirements	10
	Approval	10
	Resource requirements	10
	Learner entry requirements	10
3	Delivering technical qualifications	11
	Initial assessment and induction	11
	Employer involvement	11
	Support materials	11
4	Employer involvement	12
	Qualification approval	12
	Monitoring and reporting learner engagement	12
	Types of evidence	15
	Quality assurance process	15
	Sufficiency of involvement for each learner	15
	Live involvement	15
	Timing	15
5	Assessment	16
	Summary of assessment methods and conditions	16
	What is synoptic assessment?	17
	How the assignment is synoptic for this qualification	17
	External exam for stretch, challenge and integration	17
	Assessment objectives	18
	Exam specification	20
6	Moderation and standardisation of assessment	21
	Supervision and authentication of internally assessed work	21
	Internal standardisation	21
	Provision for reworking evidence after submission for marking by the tutor	21
	Internal appeal	22
	Moderation	22
	Post-moderation procedures	22
	Centres retaining evidence	23
7	Grading	24
	Awarding individual assessments	24
	Grade descriptors	24
	Awarding grades and reporting results	25

8 Administration	27
External quality assurance	27
Enquiries about results	27
Re-sits and shelf-life of assessment results	28
Factors affecting individual learners	28
Malpractice	28
Access arrangements and special consideration	28
Unit 301 Principles of organising, planning and pricing construction work	30
Unit 302 Constructing cut roofing	38
Unit 303 Fitting doors, windows and their finishings	42
Unit 304 Fixing stairs with turns	45
Unit 305 Principles of maintenance and repair	49
Unit 306 Set up and use fixed and transportable machinery	52
Appendix 1 Sources of general information	59

1 Introduction

What is this qualification about?

The following purpose is for the **Level 3 Advanced Technical Diploma in Site Carpentry (450) (601/7418/3)**

Area	Description
OVERVIEW	
Who is this qualification for?	<p>This qualification is aimed at you if you are looking to work in the construction industry specifically as an advanced craft site carpenter. It will provide you with a range of specialist technical practical skills and knowledge, which will equip you to seek employment or further training in site carpentry.</p> <p>While there are no formal entry requirements, a Level 2 Diploma in Site Carpentry, or equivalent industry experience is recommended.</p> <p>This qualification is suitable for anyone over the age of 16 years.</p>
What does this qualification cover?	<p>This one year full time qualification covers a wide range of knowledge and skills required for working as an advanced craft site carpenter. You will learn about the industry, including the principles of constructing buildings, and the types of information used in building design and construction. You will learn about health, safety and environmental issues faced on construction sites, and how to communicate with others on the job, including supervisory skills such as planning, organising and pricing work. You will also learn practical skills specific to site carpentry.</p> <p>You will take six compulsory units in:</p> <ul style="list-style-type: none">• Principles of organising, planning and pricing of construction work• Constructing cut roofing• Fitting doors, windows and their finishings• Fixing stairs with turns• Principles of maintenance and repair• Set up and use fixed and transportable machinery <p>The units are designed so that you learn the practical skills involved, as well as getting an overview of how a construction site is run including the rules and regulations. Building sites are very strictly controlled, so it's important that you learn about Building Regulations.</p>

Centres and providers where you do your training, work with local employers who will contribute to the knowledge and delivery of this training. Employers will provide demonstrations and talks on the industry and where possible work placements will also be provided by the employers.

WHAT COULD THIS QUALIFICATION LEAD TO?

Will the qualification lead to employment, and if so, in which job role and at what level?

This qualification prepares you with the knowledge and practical skills required to become an advanced craftsperson in site carpentry. This means you will be able to complete specialist, complex tasks and also work in a supervisory capacity in your chosen trade.

If you complete this qualification you will have an advantage when seeking employment, either on a construction site or commercial or domestic premises. You may also become self-employed working as a site carpenter on domestic repair and refurbishment projects.

Why choose this qualification over similar qualifications?

This particular qualification is intended and designed specifically for persons who have not gained employment in the construction industry, but wish to embark on career as an advanced craft site carpenter within the industry.

Will the qualification lead to further learning?

It can lead to a construction apprenticeship programme or a Level 3 NVQ Diploma in Wood Occupations (Construction). On completion of the apprenticeship you will be competent as an advanced craft site carpenter.

If you wish to progress to become a supervisor working on site, you may wish to study any of the following qualifications:

- Level 4 NVQ Diploma in Construction Site Supervision (Construction)
- Level 6 NVQ Diploma in Construction Site Management (Construction)

WHO SUPPORTS THIS QUALIFICATION?

Employer/Higher Education Institutions

This qualification is supported by the Federation of Master Builders.

Qualification structure

For the **Level 3 Advanced Technical Diploma in Site Carpentry (450)** the teaching programme must cover the content detailed in the structure below:

Qualification title		
Unit number	Unit title	GLH
Mandatory		
301	Principles of organising, planning and pricing construction work	90
302	Constructing cut roofing	90
303	Fitting doors, windows and their finishings	60
304	Fixing stairs with turns	90
305	Principles of maintenance and repair	30
306	Set up and use fixed and transportable machinery	90

Total qualification time (TQT)

Total Qualification Time (TQT) is the total amount of time, in hours, expected to be spent by a Learner to achieve a qualification. It includes both guided learning hours (which are listed separately) and hours spent in preparation, study and assessment.

Title and level	GLH	TQT
Level 3 Advanced Technical Diploma in Site Carpentry (450)	450	720

Assessment requirements and employer involvement

To achieve the **Level 3 Advanced Technical Diploma in Site Carpentry (450)** candidates must successfully complete **all** the mandatory assessment components.

Level 3 Advanced Technical Diploma in Site Carpentry (450)

Component number	Title
Mandatory	
001 or 501	Level 3 Site Carpentry - Theory exam (1)*
002	Level 3 Site Carpentry - Synoptic assignment (1)*

In addition, candidates **must** achieve the mandatory employer involvement requirement for this qualification **before** they can be awarded a qualification grade. For more information, please see guidance in *Section 4: Employer involvement*.

Employer involvement

Component number	Title
Mandatory	
830	Employer involvement

**Number of mandatory assessments per assessment type*

2 Centre requirements

Approval

New centres will need to gain centre approval. Existing centres who wish to offer this qualification must go through City & Guilds' **full** Qualification Approval Process. There is no fast track approval for this qualification. Please refer to the City & Guilds website for further information on the approval process: www.cityandguilds.com

Resource requirements

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualification before designing a course programme.

Centre staffing

Staff delivering these qualifications must be able to demonstrate that they meet the following requirements:

- be technically competent in the areas in which they are delivering
- be able to deliver across the breadth and depth of the content of the qualification being taught
- have recent relevant teaching and assessment experience in the specific area they will be teaching, or be working towards this
- demonstrate continuing CPD.

Physical resources

Centres must be able to demonstrate that they have access to the equipment and technical resources required to deliver this qualification and its assessments.

Internal Quality Assurance

Internal quality assurance is key to ensuring accuracy and consistency of tutors and markers. Internal Quality Assurers (IQAs) monitor the work of all tutors involved with a qualification to ensure they are applying standards consistently throughout assessment activities. IQAs must have, and maintain, an appropriate level of technical competence and be qualified to make both marking and quality assurance decisions through a teaching qualification or recent, relevant experience.

Learner entry requirements

Centres must ensure that all learners have the opportunity to gain the qualification through appropriate study and training, and that any prerequisites stated in the *What is this qualification about?* section are met when registering on this qualification.

Age restrictions

This qualification is approved for learners aged 16 – 19, 19+.

3 Delivering technical qualifications

Initial assessment and induction

An initial assessment of each learner should be made before the start of their programme to identify:

- if the learner has any specific learning or training needs,
- support and guidance they may need when working towards their qualification,
- the appropriate type and level of qualification.

We recommend that centres provide an introduction so that learners fully understand the requirements of the qualification, their responsibilities as a learner, and the responsibilities of the centre. This information can be recorded on a learning contract.

Employer involvement

Employer involvement is essential to maximise the value of each learner's experience. Centres are required to involve employers in the delivery of technical qualifications at Key Stage 5 and/or their assessment, for every learner. This must be in place or planned before delivery programmes begin in order to gain qualification approval. See *Section 4: Employer involvement* for more detail.

Support materials

The following resources are available for this qualification:

Description	How to access
Sample assessments	
Guidance for delivery	Available 2016 on the qualification pages on the City & Guilds website: www.cityandguilds.com
Guidance on use of marking grids	

4 Employer involvement

Employer involvement is a formal component of Key Stage 5 Technical qualifications. It does not contribute to the overall qualification grading, but is a mandatory requirement that all learners must meet. As such it is subject to external quality assurance by City & Guilds.

Department for Education (DfE) requirements state:

Employer involvement in the delivery and/or assessment of technical qualifications provides a clear 'line of sight' to work, enriches learning, raises the credibility of the qualification in the eyes of employers, parents and students and furthers collaboration between the learning and skills sector and industry.

[Technical qualifications] must:

- *require all students to undertake meaningful activity involving employers during their study; and*
- *be governed by quality assurance procedures run by the awarding organisation to confirm that education providers have secured employer involvement for every student.*

Extract from: **Vocational qualifications for 16 to 19 year olds, 2017 and 2018 performance tables: technical guidance for awarding organisations, paragraphs 89-90**

City & Guilds will provide support, guidance and quality assurance of employer involvement.

Qualification approval

To be approved to offer City & Guilds technicals, centres must provide an Employer Involvement planner and tracker showing how every learner will be able to experience meaningful employer involvement, and from where sufficient and suitable employer representatives are expected to be sourced.

Centres must include in their planner a sufficient range of activities throughout the learning programme that provide a range of employer interactions for learners. Centres must also plan contingencies for learners who may be absent for employer involvement activities, so that they are not disadvantaged.

As part of the approval process, City & Guilds will review this planner and tracker. Centres which cannot show sufficient commitment from employers and/or a credible planner and tracker will be given an action for improvement with a realistic timescale for completion. **Approval will not be given** if employer involvement cannot be assured either at the start of the qualification, or through an appropriate plan of action to address this requirement before the learner is certificated.

Monitoring and reporting learner engagement

Employer involvement is a formal component of this qualification and is subject to quality assurance monitoring. Centres must record; evidence that demonstrates that each learner has been involved in meaningful employer based activities against the mandatory content before claiming the employer involvement component for learners.

Centres must record the range and type of employer involvement each learner has experienced and submit confirmation that all learners have met the requirements to City & Guilds. If a centre cannot

provide evidence that learners have met the requirements to achieve the component, then the learner will not be able to achieve the overall Technical Qualification.

Types of involvement

Centres should note that to be eligible, employer involvement activities **must** relate to one or more elements of the mandatory content of this qualification.

As the aim of employer involvement is to enrich learning and to give learners a taste of the expectations of employers in the industry area they are studying, centres are encouraged to work creatively with local employers.

Employers can identify the areas of skills and knowledge in their particular industry that they would wish to see emphasised for learners who may apply to work with them in the future. Centres and employers can then establish the type of input, and which employer representative might be able to best support these aims.

To be of most benefit this must add to, rather than replace the centre's programme of learning. Some examples of meaningful employer involvement are listed below. Employer involvement not related to the mandatory element of the qualification, although valuable in other ways, does not count towards this element of the qualification.

The DfE has provided examples of what does and does not count as meaningful employer involvement, as follows^{1,2}:

The following activities meet the requirement for meaningful employer involvement:

- *students undertake structured work-experience or work-placements that develop skills and knowledge relevant to the qualification³;*
- *students undertake project(s), exercises(s) and/or assessments/examination(s) set with input from industry practitioner(s);*
- *students take one or more units delivered or co-delivered by an industry practitioner(s). This could take the form of master classes or guest lectures;*
- *industry practitioners operate as 'expert witnesses' that contribute to the assessment of a student's work or practice, operating within a specified assessment framework. This may be a specific project(s), exercise(s) or examination(s), or all assessments for a qualification.*

In all cases participating industry practitioners and employers must be relevant to the industry sector or occupation/occupational group to which the qualification relates.

The following activities, whilst valuable, do not meet the requirement for meaningful employer involvement:

- *employers' or industry practitioners' input to the initial design and content of a qualification;*
- *employers hosting visits, providing premises, facilities or equipment;*
- *employers or industry practitioners providing talks or contributing to delivery on employability, general careers advice, CV writing, interview training etc;*
- *student attendance at career fairs, events or other networking opportunities;*

¹ As extracted from: Vocational qualifications for 16 to 19 year olds 2017 and 2018 performance tables: technical guidance for awarding organisations

² This list has been informed by a call for examples of good practice in employer involvement in the delivery and assessment of technical qualifications - **Employer involvement in the delivery and assessment of vocational qualifications**

³ **DfE work experience guidance**

- *simulated or provider-based working environments eg hairdressing salons, florists, restaurants, travel agents, small manufacturing units, car servicing facilities;*
- *employers providing students with job references.*

Types of evidence

For each employer involvement activity, centres are required to provide evidence of which learners undertook it, e.g. a candidate attendance register. The types of additional evidence required to support a claim for this component will vary depending on the nature of the involvement. Eg for a guest lecture it is expected that a synopsis of the lecture and register would be taken which each learner and the guest speaker will have signed; expert witnesses will be identified and will have signed the relevant assessment paperwork for each learner they have been involved in assessing; evidence of contribution from employers to the development of locally set or adapted assignments.

Quality assurance process

As the employer involvement component is a requirement for achieving the KS5 Technical qualifications, it is subject to external quality assurance by City & Guilds at the approval stage and when centres wish to claim certification for learners.

Evidence will be validated by City & Guilds before learners can achieve the employer Involvement component. Where employer involvement is not judged to be sufficient, certificates cannot be claimed for learners.

Sufficiency of involvement for each learner

It is expected that the centre will plan a range of activities that provide sufficient opportunities for each learner to interact directly with a range of individuals employed in the related industry. Centres must also provide contingencies for learners who may be absent for part of their teaching, so they are not disadvantaged. Any absence that results in a learner missing arranged activities must be documented. Where learners are unable to undertake all employer involvement activities due to temporary illness, temporary injury or other indisposition, centres should contact City & Guilds for further guidance.

Live involvement

Learners will gain most benefit from direct interaction with employers and/or their staff; however the use of technology (eg the use of live webinars) is encouraged to maximise the range of interactions. Where learners are able to interact in real time with employers, including through the use of technology, this will be classed as 'live involvement'.

It is considered good practice to record learning activities, where possible, to allow learners to revisit their experience and to provide a contingency for absent learners. This is not classed as live involvement however, and any involvement of this type for a learner must be identified as contingency.

Timing

A learner who has not met the minimum requirements cannot be awarded the component, and will therefore not achieve the qualification. It is therefore important that centres give consideration to scheduling employer involvement activities, and that enough time is allotted throughout delivery and assessment of the qualification to ensure that requirements are fully met.

5 Assessment

Summary of assessment methods and conditions

Component numbers	Assessment method	Description and conditions
001/501	Externally marked exam	<p>The exam is externally set and externally marked, and will be taken online through City & Guilds' computer-based testing platform , (001) or as a paper based test (501).</p> <p>The exam is designed to assess the candidate's depth and breadth of understanding across content in the qualification at the end of the period of learning, using a range of question types and will be sat under invigilated examination conditions. See JCQ requirements for details: http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations</p> <p>The exam specification shows the coverage of the exam across the qualification content.</p> <p>Candidates who fail the exam at the first sitting will have a maximum of two opportunities to retake. If the candidate fails the exam three times then they will fail the qualification. (Note: the third and final retake opportunity applies to Level 3 only.) For exam dates, please refer to the Assessment and Examination timetable.</p>
002	Synoptic assignment	<p>The synoptic assignment is externally set, internally marked and externally moderated. The assignment requires candidates to identify and use effectively in an integrated way an appropriate selection of skills, techniques, concepts, theories, and knowledge from across the content area. Candidates will be judged against the assessment objectives.</p> <p>Assignments will be released to centres as per dates indicated in the Assessment and Examination timetable published on our website.</p> <p>Centres will be required to maintain the security of all live assessment materials. Assignments will be password protected and released to centres through a secure method.</p> <p>There will be one opportunity within each academic year to sit the assignment. Candidates who fail the assignment will have one re-sit opportunity. The re-sit opportunity will be in the next academic year, and will be the assignment set for that academic year once released to centres. If the re-sit is failed, the candidate will fail the qualification.</p> <p>Please note that for externally set assignments City & Guilds provides guidance and support to centres on the marking and moderation process.</p>

What is synoptic assessment?

Technical qualifications are based around the development of a toolkit of knowledge, understanding and skills that an individual needs in order to have the capability to work in a particular industry or occupational area. Individuals in all technical areas are expected to be able to apply their knowledge, understanding and skills in decision making to solve problems and achieve given outcomes independently and confidently.

City & Guilds technical qualifications require candidates to draw together their learning from across the qualification to solve problems or achieve specific outcomes by explicitly assessing this through the synoptic assignment component.

In this externally set, internally marked and externally moderated assessment the focus is on bringing together, selecting and applying learning from across the qualification rather than demonstrating achievement against units or subsets of the qualification content. The candidate will be given an appropriately levelled, substantial, occupationally relevant problem to solve or outcome to achieve. For example this might be in the form of a briefing from a client, leaving the candidate with the scope to select and carry out the processes required to achieve the client's wishes, as they would in the workplace.

Candidates will be marked against assessment objectives (AOs) such as their breadth and accuracy of knowledge, understanding of concepts, and the quality of their technical skills as well as their ability to use what they have learned in an integrated way to achieve a considered and high quality outcome.

How the assignment is synoptic for this qualification

The typical assignment brief could be to fit a door on site into a newly installed frame where the door requires adapting to fit the door frame. This will require the candidate to draw on their knowledge and skills from across the qualification to prepare a cutting list, machine timber to size, lip the door, prepare for receiving a paint finish, hang a door including fitting a deadlock and escutcheon and check the operation of the completed door. Candidates will demonstrate they are following Health and Safety regulations at all times which will draw upon their knowledge of legislation and regulations.

External exam for stretch, challenge and integration

The external assessment will draw from across the mandatory content of the qualification, using a range of shorter questions to confirm breadth of knowledge and understanding. Extended response questions are included, giving candidates the opportunity to demonstrate higher level understanding and integration through discussion, analysis and evaluation, and ensuring the assessment can differentiate between 'just able' and higher achieving candidates.

Assessment objectives

The assessments for this qualification are set against a set of assessment objectives (AOs) which are used across all City & Guilds Technicals to promote consistency among qualifications of a similar purpose. They are designed to allow judgement of the candidate to be made across a number of different categories of performance.

Each assessment for the qualification has been allocated a set number of marks against these AOs based on weightings recommended by stakeholders of the qualification. This mark allocation remains the same for all versions of the assessments, ensuring consistency across assessment versions and over time.

The following table explains all AOs in detail, including weightings for the synoptic assignments. In some cases, due to the nature of a qualification's content, it is not appropriate to award marks for some AOs. Where this is the case these have been marked as N/A. Weightings for exams (AOs 1, 2 and 4 only) can be found with the exam specification.

Assessment objective	Level 3 Advanced Technical Diploma in Site Carpentry (450) Typical expected evidence of knowledge, understanding and skills	Approximate weighting (Assignment)
A01 Recalls knowledge from across the breadth of the qualification.	Use of tools, equipment and machinery, methods of work, practical techniques, Health and Safety legislation, risk management, component terminology, positioning and fixing, carpentry techniques and processes, inspection and maintenance of tools, use of PPE/safety aids and workpiece support, types and arrangements used in the various aspects of carpentry work, fitting ironmongery.	10%
A02 Demonstrates understanding of concepts, theories and processes from across the breadth of the qualification.	Use of tools, equipment and machinery, methods of work, practical techniques, Health and Safety legislation, risk management, component terminology, positioning and fixing, carpentry techniques and processes, inspection and maintenance of tools, use of PPE/safety aids and workpiece support, fitting ironmongery.	20%
A03 Demonstrates technical skills from across the breadth of the qualification.	How to use tools, equipment and machinery, methods of work, practical techniques, Health and Safety legislation risk management, component terminology, positioning and fixing, carpentry techniques and processes, inspection and maintenance of tools, use of PPE/safety aids and work piece support, fitting ironmongery. Set up, adjust and operate machinery; use hand and power tools; change tooling/blades; inspection; saw, plane, profile and mortice; use safety aids; measuring and working accurately to tolerances; working safely according to risk assessment and method statement; determining lengths and angles, positioning and fixing of components and finishings; hanging doors; fitting ironmongery.	40%
A04 Applies knowledge, understanding and skills from across the breadth of the	Applying knowledge and understanding to the tasks/scenario, problem solving techniques used and able to justify decision taken. Materials and	10%

qualification in an integrated and holistic way to achieve specified purposes.

techniques used appropriately, correct sequence of operations carried out. Safe working practices demonstrated. Tasks planned, prepared and completed to the specification.

A05 Demonstrates perseverance in achieving high standards and attention to detail while showing an understanding of wider impact of their actions.

Accuracy of measuring, cutting and fixing. Minimal gaps in joints and when fitting ironmongery, adherence to tolerances and the details during the tasks.

20%

Exam specification

Assessment Objective weightings per exam.

Assessment Objective	Exam 001/501 weighting (approx. %)
AO1 Recalls knowledge from across the breadth of the qualification.	41
AO2 Demonstrates understanding of concepts, theories and processes from across the breadth of the qualification.	42
AO4 Applies knowledge, understanding and skills from across the breadth of the qualification in an integrated and holistic way to achieve specified purposes.	17

The way the exam covers the content of the qualification is laid out in the table below:

Assessment type: Examiner marked, written exam, usually delivered online*

Assessment conditions: Invigilated examination conditions*

Grading: D/M/P/X

Exam 001/501	Duration: 2 hours, 30 minutes		
Unit number	Unit title	Number of marks	%
301	Principles of organising, planning and pricing construction work	27	39
305	Principles of maintenance and repair	8	11
306	Set up and use fixed and transportable machinery	23	33
Applied knowledge and understanding		12	17
Total		70	100

*These exams are sat under invigilated examination conditions, as defined by the JCQ:
<http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations>.

Entry for exams can be made through the City & Guilds Walled Garden.

6 Moderation and standardisation of assessment

City & Guilds' externally set assignments for technical qualifications are designed to draw from across the qualifications' content, and to contribute a significant proportion towards the learner's final qualification grade. They are subject to a rigorous external quality assurance process known as external moderation. This process is outlined below. For more detailed information, please refer to 'Marking and moderation - Technicals centre guidance' available to download on the City & Guilds website.

It is vital that centres familiarise themselves with this process, and how it impacts on their delivery plan within the academic year.

Supervision and authentication of internally assessed work

The Head of Centre is responsible for ensuring that internally assessed work is conducted in accordance with City & Guilds' requirements.

City & Guilds requires both tutors and candidates to sign declarations of authenticity. If the tutor is unable to sign the authentication statement for a particular candidate, then the candidate's work cannot be accepted for assessment.

Internal standardisation

For internally marked work⁴ the centre is required to conduct internal standardisation to ensure that all work at the centre has been marked to the same standard. It is the Internal Quality Assurer's (IQA's) responsibility to ensure that standardisation has taken place, and that the training includes the use of reference and archive materials such as work from previous years as appropriate.

Provision for reworking evidence after submission for marking by the tutor

It is expected that in many cases a candidate who is struggling with a specific piece of work may themselves choose to restart and rectify the situation during their normal allocated time, and before it gets to the stage of it being handed in for final marking by the tutor.

In exceptional circumstances however, where a candidate has completed the assignment in the required timescales, and has handed it in for marking by the tutor but is judged to have significantly underperformed, may be allowed to rework or supplement their original evidence for remarking prior to submission for moderation. For this to be allowed, the centre must be confident that the candidate will be able to improve their performance without additional feedback from their tutor and within the required timescales ie the candidate has shown they can perform sufficiently better previously in formative assessments.

The reworked and/or supplemented original evidence must be remarked by the tutor in advance of the original moderation deadline and the moderator informed of any candidates who have been allowed to resubmit evidence.

The process must be managed through the IQA. The justification for allowing a resubmission should be recorded and made available on request. The use of this provision will be monitored by City & Guilds.

⁴ For any internally assessed optional unit assignments, the same process must be followed where assessors must standardise their interpretation of the assessment and grading criteria.

Internal appeal

Centres must have an internal process in place for candidates to appeal the marking of internally marked components, ie the synoptic assignment and any optional unit assignments. This must take place before the submission of marks for moderation. The internal process must include candidates being informed of the marks (or grades) the centre has given for internally assessed components, as they will need these to make the decision about whether or not to appeal.

Centres cannot appeal the outcome of moderation for individual candidates, only the moderation process itself. A request for a review of the moderation process should be made to **appeals@cityandguilds.com**.

Moderation

Moderation is the process where external markers are standardised to a national standard in order to review centre marking of internally marked assessments. These markers are referred to as 'moderators'. Moderators will mark a representative sample of candidates' work from every centre. Their marks act as a benchmark to inform City & Guilds whether centre marking is in line with the City & Guilds standard.

Where moderation shows that the centre is applying the marking criteria correctly, centre marks for the whole cohort will be accepted.

Where moderation shows that the centre is either consistently too lenient or consistently too harsh in comparison to the national standard, an appropriate adjustment will be made to the marks of the whole cohort, retaining the centre's rank ordering.

Where centre application of the marking criteria is inconsistent, an appropriate adjustment for the whole cohort may not be possible on the basis of the sample of candidate work. In these instances a complete remark of the candidate work may be necessary. This may be carried out by the centre based on feedback provided by the moderator, or carried out by the moderator directly.

Moderation applies to all internally marked assignments. Following standardisation and marking, the centre submits all marks and candidate work to City & Guilds via the moderation platform. The deadline for submission of evidence will be available on Walled Garden. See the *Marking and moderation - Technicals Centre Guidance* document for full details of the requirements and process.

In most cases candidate work will be submitted directly to the moderator for moderation. This includes written work, photographic and pictorial evidence, or video and audio evidence. For some qualifications there will be a requirement for moderators to visit centres to observe practical assessments being undertaken. This will be for qualifications where the assessment of essential learner skills can only be demonstrated through live observation. The purpose of these visits is to ensure that the centre is assessing the practical skills to the required standards, and to provide the moderators with additional evidence to be used during moderation. These visits will be planned in advance with the centre for all relevant qualifications.

Post-moderation procedures

Once the moderation process has been completed, the confirmed marks for the cohort are provided to the centre along with feedback from the moderator on the standard of marking at the centre, highlighting areas of good practice, and potential areas for improvement. This will inform future marking and internal standardisation activities.

City & Guilds will then carry out awarding, the process by which grade boundaries are set with reference to the candidate evidence available on the platform.

Centres retaining evidence

Centres must retain assessment records for each candidate for a minimum of three years. To help prevent plagiarism or unfair advantage in future versions, candidate work may not be returned to candidates. Samples may however be retained by the centre as examples for future standardisation of marking.

7 Grading

Awarding individual assessments

Individual assessments will be graded, by City & Guilds as pass/merit/distinction where relevant. The grade boundaries for pass and distinction for each assessment will be set through a process of professional judgement by technical experts Merit will usually be set at the midpoint between pass and distinction. The grade descriptors for pass and distinction, and other relevant information (eg archived samples of candidate work and statistical evidence) will be used to determine the mark at which candidate performance in the assessment best aligns with the grade descriptor in the context of the qualification's purpose. Boundaries will be set for each version of each assessment to take into account relative difficulty.

Please note that as the Merit grade will usually be set at the arithmetical midpoint between pass and distinction, there are no descriptors for the Merit grade for the qualification overall.

Grade descriptors

To achieve a pass, a candidate will be able to

- Demonstrate the knowledge and understanding required to work in the occupational area, its principles, practices and legislation.
- Describe some of the main factors impacting on the occupation to show good understanding of how work tasks are shaped by the broader social, environmental and business environment it operates within.
- Use the technical industry specific terminology used in the industry accurately.
- Demonstrate the application of relevant theory and understanding to solve non-routine problems.
- Interpret a brief for complex work related tasks, identifying the key aspects, and showing a secure understanding of the application of concepts to specific work related tasks.
- Carry out planning which shows an ability to identify and analyse the relevant information in the brief and use knowledge and understanding from across the qualification (including complex technical information) to interpret what a fit for purpose outcome would be and develop a plausible plan to achieve it.
- Achieve an outcome which successfully meets the key requirements of the brief.
- Identify and reflect on the most obvious measures of success for the task and evaluate how successful they have been in meeting the intentions of the plan.
- Work safely throughout, independently carrying out tasks and procedures, and having some confidence in attempting the more complex tasks.

To achieve a distinction, a candidate will be able to

- Demonstrate the excellent knowledge and understanding required to work to a high level in the occupational area, its principles, practices and legislation.
- Analyse the impact of different factors on the occupation to show deep understanding of how work tasks are shaped by the broader social, environmental, and business environment it operates within.
- Demonstrate the application of relevant theory and understanding to provide efficient and effective solutions to complex and non-routine problems.
- Analyse the brief in detail, showing confident understanding of concepts and themes from across the qualification content, bringing these together to develop a clear and stretching plan, that would credibly achieve an outcome that is highly fit for purpose.
- Achieve an outcome which shows an attention to detail in its planning, development and completion, so that it completely meets or exceeds the expectations of the brief to a high standard.

- Carry out an evaluation in a systematic way, focussing on relevant quality points, identifying areas of development/ improvement as well as assessing the fitness for purpose of the outcome.

Awarding grades and reporting results

The overall qualification grade will be calculated based on aggregation of the candidate's achievement in each of the assessments for the mandatory units, taking into account the assessments' weighting. The **Level 3 Advanced Technical Diploma in Site Carpentry** will be reported on a four grade scale: Pass, Merit, Distinction, Distinction*.

All assessments **must** be achieved at a minimum of Pass for the qualification to be awarded. Candidates who fail to reach the minimum standard for grade Pass for an assessment(s) will not have a qualification grade awarded and will not receive a qualification certificate.

The approximate pass grade boundary(ies) for the synoptic assignment(s) in this qualification are:

Synoptic Assignment	Pass Mark (%)
002	43

Please note that each synoptic assignment is subject to an awarding process before final grade boundaries are confirmed.

The contribution of assessments towards the overall qualification grade is as follows:

Assessment method	Grade scale	% contribution
Exam 001/501	X/P/M/D	40%
Synoptic assignment (002)	X/P/M/D	60%

Both synoptic assignments and exams are awarded (see 'Awarding individual assessments', at the start of Section 7, above), and candidates' grades converted to points. The minimum points available for each assessment grade is listed in the table below. A range of points between the Pass, Merit and Distinction boundaries will be accessible to candidates. For example a candidate that achieves a middle to high Pass in an assessment will receive between 8 and 10 points, a candidate that achieves a low to middle Merit in an assessment will receive between 12 and 14 points. The points above the minimum for the grade for each assessment are calculated based on the candidate's score in that assessment.

	Pass	Merit	Distinction
Theory exam: 40%	6	12	18
Synoptic assignment: 60%	6	12	18

The candidate's points for each assessment are multiplied by the % contribution of the assessment and then aggregated. The minimum points required for each qualification grade are as follows:

Qualification Grade	Minimum points
---------------------	----------------

Distinction*	20.5
Distinction	17
Merit	11
Pass	6

Candidates achieving Distinction* will be the highest achieving of the Distinction candidates.

8 Administration

Approved centres must have effective quality assurance systems to ensure valid and reliable delivery and assessment of qualifications. Quality assurance includes initial centre registration by City & Guilds and the centre's own internal procedures for monitoring quality assurance procedures.

Consistent quality assurance requires City & Guilds and its associated centres to work together closely; our Quality Assurance Model encompasses both internal quality assurance (activities and processes undertaken within centres) and external quality assurance (activities and processes undertaken by City & Guilds).

For this qualification, standards and rigorous quality assurance are maintained by the use of:

- internal quality assurance
- City & Guilds external moderation.

In order to carry out the quality assurance role, Internal Quality Assurers (IQAs) must have and maintain an appropriate level of technical competence and have recent relevant assessment experience. For more information on the requirements, refer to *Section 2: Centre requirements* in this handbook.

To meet the quality assurance criteria for this qualification, the centre must ensure that the following procedures are followed:

- suitable training of staff involved in the assessment of the qualification to ensure they understand the process of marking and standardisation
- completion by the person responsible for internal standardisation of the Centre Declaration Sheet to confirm that internal standardisation has taken place
- the completion by candidates and supervisors/tutors of the record form for each candidate's work.

External quality assurance

City & Guilds will undertake external moderation activities to ensure that the quality assurance criteria for this qualification are being met. Centres must ensure that they co-operate with City & Guilds staff and representatives when undertaking these activities.

City & Guilds requires the Head of Centre to

- facilitate any inspection of the centre which is undertaken on behalf of City & Guilds
- make arrangements to receive, check and keep assessment material secure at all times,
- maintain the security of City & Guilds confidential material from receipt to the time when it is no longer confidential and
- keep completed assignment work and examination scripts secure from the time they are collected from the candidates to their dispatch to City & Guilds.

Enquiries about results

The services available for enquiries about results include a review of marking for exam results and review of moderation for internally marked assessments.

For further details on enquiries and appeals process and for copies of the application forms, please visit the **appeals page** of the City & Guilds website at **www.cityandguilds.com**.

Re-sits and shelf-life of assessment results

Candidates who have failed an exam or wish to re-take it in an attempt to improve their grade, can do so **twice**. The best result will count towards the final qualification. See guidance on individual assessment types in Section 5.

Factors affecting individual learners

If work is lost, City & Guilds should be notified immediately of the date of the loss, how it occurred, and who was responsible for the loss. Centres should use the JCQ form, JCQ/LCW, to inform City & Guilds Customer Services of the circumstances.

Learners who move from one centre to another during the course may require individual attention. Possible courses of action depend on the stage at which the move takes place. Centres should contact City & Guilds at the earliest possible stage for advice about appropriate arrangements in individual cases.

Malpractice

Please refer to the City & Guilds guidance notes *Managing cases of suspected malpractice in examinations and assessments*. This document sets out the procedures to be followed in identifying and reporting malpractice by candidates and/or centre staff and the actions which City & Guilds may subsequently take. The document includes examples of candidate and centre malpractice and explains the responsibilities of centre staff to report actual or suspected malpractice. Centres can access this document on the City & Guilds website.

Examples of candidate malpractice are detailed below (please note that this is not an exhaustive list):

- falsification of assessment evidence or results documentation
- plagiarism of any nature
- collusion with others
- copying from another candidate (including the use of ICT to aid copying), or allowing work to be copied
- deliberate destruction of another's work
- false declaration of authenticity in relation to assessments
- impersonation.

These actions constitute malpractice, for which a penalty (eg disqualification from the assessment) will be applied.

Where suspected malpractice is identified by a centre after the candidate has signed the declaration of authentication, the Head of Centre must submit full details of the case to City & Guilds at the earliest opportunity. Please refer to the form in the document *Managing cases of suspected malpractice in examinations and assessments*.

Access arrangements and special consideration

Access arrangements are adjustments that allow candidates with disabilities, special educational needs and temporary injuries to access the assessment and demonstrate their skills and knowledge without changing the demands of the assessment. These arrangements must be made before assessment takes place.

It is the responsibility of the centre to ensure at the start of a programme of learning that candidates will be able to access the requirements of the qualification.

Please refer to the *JCQ access arrangements and reasonable adjustments* and *Access arrangements - when and how applications need to be made to City & Guilds* for more information.

Both are available on the City & Guilds website: <http://www.cityandguilds.com/delivering-our-qualifications/centre-development/centre-document-library/policies-and-procedures/access-arrangements-reasonable-adjustments>

Special consideration

We can give special consideration to candidates who have had a temporary illness, injury or indisposition at the time of the examination. Where we do this, it is given after the examination.

Applications for either access arrangements or special consideration should be submitted to City & Guilds by the Examinations Officer at the centre. For more information please consult the current version of the JCQ document, *A guide to the special consideration process*. This document is available on the City & Guilds website: <http://www.cityandguilds.com/delivering-our-qualifications/centre-development/centre-document-library/policies-and-procedures/access-arrangements-reasonable-adjustments>.

Unit 301

Principles of organising, planning and pricing construction work

UAN:	J/507/3230
Level:	3
GLH:	90

What is this unit about?

The purpose of this unit is to introduce the learner to the wider construction industry, to give a broader context to the trade they are studying. The construction industry is a vital part of the economy and plays an important role in all our lives. It affects where we live, where we study, where we work, how we travel and how we spend our leisure time. This unit provides learners with an understanding of the way the building process is managed.

Development of a safe, secure and sustainable built environment is essential. Nowadays, this development must take place without harming the natural environment. Care for the environment and the use of sustainable technology is implicit in the content of this unit. The unit will enable learners to gain an overview of the way a construction site is run, completed and occupied efficiently, safely and with a minimal impact to the environment. This is tightly controlled by regulations and a team of inspectors who ensure these regulations are carried out. Additionally, any construction project will have its own management structure to ensure the construction project runs smoothly. This involves communicating efficiently, and there are many ways of ensuring information is passed from person to person using traditional and modern electronic means.

No prior knowledge of the built environment sector is required but learners should possess basic numeracy and literacy skills in order to understand the content properly.

Learning outcomes

In this unit, learners will

1. understand the way the construction industry is regulated
2. understand energy efficiency and sustainable materials for construction
3. understand how to estimate quantities and price work for construction
4. understand how to plan work activities for construction
5. understand how to communicate effectively in the workplace
6. understand and use drawings and associated software.

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome 1: Understand the way the construction industry is regulated

Topic 1.1: Health and safety regulations

Topic 1.2: Planning permission and building control

Topic 1.1

Learners must be aware of the different health and safety regulations that apply to the construction industry. The focus of this topic **isn't** about the practical application of carrying out health and safety but how these regulations affect all aspects of risk management from the initial design phase through to its eventual demolition.

Regulations

- Health and Safety at Work Act
- Reporting Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
- Control of Substances Hazardous to Health (COSHH)
- Construction (Design and Management) (CDM) regulations
- Provision and Use of Work Equipment Regulations (PUWER)
- Manual Handling Operations Regulations
- Personal Protective Equipment (PPE) at Work Regulations
- Work at Height Regulations
- Control of Noise at Work Regulations
- Control of Vibration at Work Regulations
- Electricity at Work Regulations
- Lifting Operations and Lifting Equipment Regulations (LOLER)

Topic 1.2

Learners must be aware that construction is tightly controlled by Building and Planning Regulations and how these affect the building process. The learner will have an overview of the building regulations and the area they refer to. An in-depth knowledge of the content of the building regulations is **not** a requirement at this stage.

The learner will be aware of the planning process and how this affects the construction industry. An in-depth knowledge of planning is **not** required, but they should be aware of permitted development, outline and detailed planning permission, and listed building consent.

Learning outcome 2: Understand energy efficiency and sustainable materials for construction

Topic 2.1: Sustainable development

Topic 2.2: Thermally insulated materials

Topic 2.3: Construction methods for insulation

Topic 2.4: Energy saving measures

Topic 2.1

Learners will need to have a basic understanding of current guidance on sustainable building.

- Code for sustainable homes – Building Research Establishment Environmental Assessment Methodology (BREEAM)
- Voluntary standards eg Passive house
- Building regulations

Topic 2.2

Learners must develop an understanding of the properties of thermally insulating materials and be able to compare them in relation to cost, environmental impact and performance (eg U-values).

Materials such as Polyisocyanurate (PIR), expanded polystyrene (EP) fibre glass, sheep wool, mineral wool, double/triple/secondary glazed units, multi-foil insulation, phenolic insulation board

Topic 2.3

Learners must develop an understanding on the uses of insulation, where they are placed and how buildings are designed to incorporate insulation (within new and existing buildings).

- Correct selection of insulating materials
- Positioning of insulation

Topic 2.4

Learners will need to have a basic understanding of methods for reducing energy use and the environmental impact of a building.

- Renewable energy sources (eg solar, photovoltaic, ground or air source, wind turbines)
- Design features such as air tightness, lighting, water harvesting
- Local and sustainable materials
- Energy Performance Certificates (EPCs)

Learning outcome 3: Understand how to estimate quantities and price work for construction

Topic 3.1: Tendering process

Topic 3.2: Calculate quantities of building materials

Topic 3.3: Prepare a quote

Topic 3.1

Learners must understand the process of tendering for work. The learner should be able to explain the difference between quoting and estimating. Learners should also understand the types of tenders

- open
- closed.

As part of the tendering process, learners should have an understanding of penalty clauses and retention payments.

Topic 3.2

Learners must understand the process of calculating quantities of materials for building work. The processes should include

- specifications/drawings
- preparing a material list using a schedule
- bill of quantities
- calculations (percentages for waste, linear, area and volume)
- selection of suppliers (preferred, nominated, locally sourced).

Topic 3.3

Learners will be able to prepare a quote for a given building project including

- labour
- materials
- overheads
- plant and equipment
- profits
- VAT.

Learning outcome 4: Understand how to plan work activities for construction

Topic 4.1: Planning construction works

Topic 4.2: Statutory safety documentation

Topic 4.1

Learners must develop an understanding of the reasons and methods for planning construction work activities. The learner must understand why the planning of work activities is vital to efficient use of materials, cost and completing within the contracted time.

- Planning methods to include: bar charts (Gantt chart) and critical path analysis
- Timing of labour, plant and material requirements

Learners must understand how to produce a programme of works in relation to planning a small building project.

Topic 4.2

Learners must understand the reasons for completing a risk assessment and a method statement and be able to apply them to a work activity. At this level they should be able to guide others through the completion of a risk assessment.

Learners must understand the purpose of a permit to work.

Learning outcome 5: Understand how to communicate effectively in the workplace

Topic 5.1: Written and oral communication

Topic 5.1

Learners must develop an understanding of the different methods used to convey information between members of the building team. These may be verbal, on paper or electronic. The nature of communication is rapidly changing and an emphasis must be placed upon keeping up to date with such developments. Learners will be able to

- produce a written communication for a client
- prepare a toolbox talk
- coordinate a work activity
- prepare an agenda for a meeting.

Learning outcome 6: Understand and use drawings and associated software

Topic 6.1: Manual drafting

Topic 6.2: Computer Aided Design (CAD)

Topic 6.3: Building Information Modelling (BIM)

Topic 6.1

Learners must develop a range of the skills required to produce appropriate construction drawings. This will include drawing practice to develop specific skills and the application of these skills to produce a range of drawings in accordance with British Standards and other standard conventions.

Learners will have an awareness of the use of orthographic and isometric projections. Learners will be able to produce a drawing to scale using appropriate symbols and hatchings and elevations and plans.

Topic 6.2

Learners should be aware of the range of computer drawing software packages available, and the hardware required to run them. They do not need an in-depth working knowledge of each system, but they do need to know that there is a range of options, and that these vary considerable in complexity and cost.

Learners will be able to compare advantages and disadvantages of Computer Aided Design (CAD) programs to traditional drawing methods.

It would be an advantage for learners to develop CAD software skills however this will not be assessed.

Topic 6.3

Learners need to be aware of Building Information Modelling (BIM) and how it is used in the built environment today. BIM is not a software package, a computer-generated 3D model of a building, or even a method of simulation, communication or sharing data. It is a collaborative integrated approach to building design, construction and management through the whole lifecycle. Learners should know the advantages of BIM and how it is used on projects. This should consider

- 3D Modelling
- change management
- building simulation
- data management
- building operation.

Learners should be aware of requirements for the integration of BIM being driven by the government. They also need to be aware of the different software packages used and how these integrate with each other and the different stages of the process.

Guidance for delivery

This unit should be one of the first units delivered in this qualification because it informs much of the content of the other units. Tutors delivering this unit have opportunities to use a wide range of techniques. Lectures, discussions, seminar presentations, site visits, research using the internet and/or library resources and the use of personal and/or industrial experience will all be valuable. Delivery should stimulate, motivate and educate the learner. Structured site visits will prove enjoyable and useful, as would guest speakers drawn from local employers, trade unions and professional associations. Such guest speakers will bring up-to-date experience of working in today's built environment sector.

The unit has a broad content, covering how the construction industry is regulated in both safety, quality and environmental areas, how work is tendered for, estimated and priced, how work is planned and how communications take place.

Teaching and learning strategies must help learners to develop a clear and simple understanding of how the construction industry functions. This can be done by examining the industry from a variety of perspectives, breaking the knowledge down into bite-sized pieces and then asking the learners to work out how they fit together to form a united whole. This should be based on real-life case studies.

Health, safety and welfare issues are paramount and should be strictly reinforced through close supervision of all activities and risk assessments must be undertaken prior to any visits to sites, or any other places of interest.

Employer engagement

Employer engagement is an excellent way to maximise the learners' experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Employers could also contribute to learners' progress by acting as guest speakers.

Useful support for links with industry is given below:

- National Education and Business Partnership Network – www.nebpn.org
- Work Experience/Workplace Learning Frameworks – Centre for Education and Industry (CEI University of Warwick) - www.warwick.ac.uk/wie/ce
- Construction Industry Joint Council - Working rule agreement for the construction Industry UK www.builders.org.uk/resources/nfb/000/322/301/May_2013_WRA_Final_Version.pdf
- Born to build - www.borntobuild.org.uk
- The UK Contractors Group - www.ukcgroup.org.uk/representing-industry/open-doors-weekend

Suggested learning resources

Books

Construction Technology Published by: Heinemann, 2011 ISBN: 0-435-04682-9	Greeno R, Chudley R, Topliss S, Hurst M
Sustainable Practices in the Built Environment Published by: Butterworth-Heinemann, 2001 ISBN: 0-750-65153-9	Langston C A
Introduction to Building Published by: Pearson, 1997 ISBN: 0-582-30200-5	Osbourn D, Greeno R
Construction and the Built Environment: Level 2 Higher Diploma Published by: Heinemann, 2008 ISBN: 0-435-49991-2	Manley S, Charters M, Francis C, Topliss S, Doyle M
Level 3 Diploma in Bricklaying Published by: City and Guilds ISBN-13: 978-0851933030	Beattie, J; Tucker, T; Burdfield, M & Fearn, C
Level 3 Diploma in Site Carpentry & Bench Joinery Published by: City and Guilds ISBN: 978-0-85193-304-7	Burdfield, M; Redfern, S. Fearn, C

Journals

- Building Construction News
- Architects' Journal - AJ
- Building Design
- Housebuilder
- Property Week
- New Civil Engineer
- CIBSE Journal

Websites

Construction Industry Training Board	www.citb.co.uk
Construction Industry Research and Information Association	www.ciria.co.uk
The Health and Safety Executive	www.hse.gov.uk
National House Building Council	www.nhbc.co.uk
Chartered Institute of Building	www.ciob.org.uk
Green Building	www.greenbuilding.co.uk
BREEAM	www.breeam.org
Building Research Establishment Group	www.bre.co.uk
Passivhaus (Passive House)	www.passivhaus.org.uk

UAN:	Y/507/3247
Level:	3
GLH:	90

What is this unit about?

The purpose of this unit is for learners to develop a thorough understanding of the principles and processes of constructing hand cut roofs using traditional jointing techniques. They will learn how to erect and fix the components safely using traditional methods, ensuring that all work undertaken complies with current building regulations.

The manufacture of traditional cut roofing requires the learner to develop a good understanding of the types of roof construction and its components. They will be able to calculate the rafter lengths and angles using a range of methods. Further to this they will learn how to form openings in roofs such as for dormer windows or when trimming around a chimney.

Learning outcomes

In this unit, learners will

1. understand roofing types and component terminology
2. construct a traditional cut roof.

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome 1: Understand roofing types and component terminology

Topic 1.1: Types of roof construction

Topic 1.2: Roof components

Topic 1.1

Learners must understand and recognise the following

- types of roofs (single, double and triple),
- shapes of roofs (flat, lean-to, mono-pitch, gable-end, hipped-end, mansard, valley, part gable/part hipped-end (gambrel, jerkin-head, gablet).

Learners must have the knowledge of how to deal with out of square buildings, unequal pitches and the use of split ridges where wall plates are not parallel.

Topic 1.2

Learners must be able to recognise the component parts of a traditionally cut roof.

Roof Components

Wall plate, ridge board, common rafters, hip rafters, saddle board, crown rafter, valley rafter, hip jack rafters, flying jack rafters, cripple rafters, purlins, gable ladder, lay board, soffit, fascia, barge board, ceiling joists, collar ties, restraining straps, binders, struts, angle tie, dragon tie and beam, trimmers, studs

Learning outcome 2: Construct a traditional cut roof

Topic 2.1: Building regulations

Topic 2.2: Working safely at height

Topic 2.3: Determining lengths and angles

Topic 2.4: Fixing and positioning rafters

Topic 2.5: Eaves and gable finishes

Topic 2.1

Learners must be aware of the regulations and be able to apply them when constructing a traditional cut roof.

- Building Regulations (part A, part L)

Topic 2.2

Learners must be able to work safely at height and determine the appropriate working platform and access equipment to be used.

- Health and Safety (PPE, PUWER, Working at height regulations)
- Fall arrest systems
- Types of access equipment: Length of activity, type of work, number of operatives, type of access and egress, ground and weather conditions, passers-by/pedestrians and risks of dust and falling debris)

Learners must also be able prepare a method statement and a risk assessment for constructing a traditional cut roof with dormer.

Topic 2.3

Learners must be able to determine the length and angles of component parts of a traditionally cut roof.

Information requirements

Span, run, pitch and rise

Methods used to determine rafter lengths and bevels

Full-size setting out, scale drawings, roofing square, rise and run and ready reckoner

Calculating rafter lengths cuts and angles

Common rafter length, seat and plumb cut, hip rafter length, plumb and seat cut, backing bevel and edge cut. Jack rafter length and angles and purlin edge and side cuts

Topic 2.4

Learners must have the knowledge and understanding and be able to cut, position and fix rafters to form roof structures using the correct sequence. They must also understand the types of lengthening joints that may be required.

Roof structures

gable ended roofs, hipped ended roofs, valley roofs

Learners must know how to form openings within the roof construction.

- Types of opening: chimneys, dormers and roof lights
- Types of dormers: flat, segmental, pitched and eyebrow

Learner must be able to form the following openings.

- Pitch dormer, chimney

Topic 2.5

Learners must have the knowledge and understanding of how to finish a traditional cut roof at the eaves and gable.

Eaves finishing

Flush, open, closed and sprocketed

Guidance for delivery

Learners should have either completed the level 2 qualification or have prior knowledge and skills at level 2 in Site Carpentry. Tutors need to be aware of prior learning that has taken place and use this information to structure individualised learning where appropriate.

Tutors should make the best use of available resources to provide learners the opportunity to learn using a wide range of activities that could include lectures, discussions, self-study, research opportunities, visits and exhibitions and practical training to stimulate, motivate and educate the learner.

Employer engagement

Employer engagement is an excellent way to maximise the learners' experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Employers could also contribute to learners' progress by acting as guest speakers.

Useful support for links with industry is given below:

- National Education and Business Partnership Network – **www.nebpn.org**
- Work Experience/Workplace Learning Frameworks – Centre for Education and Industry (CEI University of Warwick) - **www.warwick.ac.uk/wie/ce**
- Construction Industry Joint Council - Working rule agreement for the construction Industry UK **www.builders.org.uk/resources/nfb/000/322/301/May_2013_WRA_Final_Version.pdf**
- Born to build - **www.borntobuild.org.uk**
- The UK Contractors Group - **www.ukcg.org.uk/representing-industry/open-doors-weekend**

Suggested learning resources

Books

Level 3 Diploma in Site Carpentry & Bench Joinery
Published by City and Guilds, 2015
ISBN-10: 0851933041
ISBN-13: 978-0851933047

Burdfield, M, Redfern, S, Fearn C et al

Level 2 Diploma in Site Carpentry & Bench Joinery
Published by City and Guilds, 2014
ISBN-10: 085193269X
ISBN-13: 978-0851932699

Fearn C, Raine, S, Taylor, T & Burdfield, M

Websites

Building regulations
Health and Safety Executive

<http://www.planningportal.gov.uk>
<http://www.hse.gov.uk>

Unit 303

Fitting doors, windows and their finishings

UAN:	D/507/3248
Level:	3
GLH:	60

What is this unit about?

The aim of this unit is to provide the learner with the knowledge and skills to carry out the installation of complex non-standard doors and window frames and hatch linings in accordance with the current Health and Safety and Building Regulations.

The skills developed by the learner will include the:

- use of woodworking hand tools and powered hand tools
- fitting of doors and windows.

Buildings have openings to allow access, enable light to enter and to provide ventilation. It is the carpenter's job to fit and fix this joinery including associated ironmongery. Door and window frames can be simple or more complex such as sliding sash and bay windows, double and shaped doors.

Learning outcomes

In this unit, learners will

1. install complex doors, windows and ironmongery.

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome 1: Install complex doors, windows and ironmongery

Topic 1.1: Types of double doors and ironmongery

Topic 1.2: Types of windows

Topic 1.3: Hanging doors

Topic 1.4: Fitting bay windows

Topic 1.1

Learners must be able to describe the following types of door.

- Garage, french doors, rebated, sliding, single and double action, sliding and folding doors (centre-folding and end-folding).

Learners must also be able to describe ironmongery, and how each is used.

Door ironmongery

Butt, tee and double action, flag and parliament hinges, floor and transom springs, rebated mortice latch/rebate kit, door closers, door selectors, dead locks, euro locks, privacy locks, three/five levers, security, espagnolette, inset shoot bolts, barrel bolts, escutcheons, intumescent strips, smoke seals, weather seals, view holes, proprietary threshold, lever/knob handles, panic bar and pads, finger and kicking plate, trickle vents

Topic 1.2

Learners must be able to describe the following types of windows.

Bay, sliding sash, traditional casement and stormproof (including high performance)

Topic 1.3

Learners must be able to hang double doors and double action doors using the ironmongery listed.

Door ironmongery

Butt hinges, double action hinges, rebated mortice latch/rebate kit, overhead door closers, door selectors, barrel bolts, lever handles

Topic 1.4

Learners must understand and be able to fit a bay window including the window board, architraves and projecting sill. Learners will be able to determine mitre angles using bisection. In addition they will be able to fix the window board by a variety of means dependent of the surface finish of the window board.

Fix

Counter-bored and pelleted, concealed brackets, nailed and punched, proprietary panel adhesive

Guidance for delivery

The learner should have either completed the level 2 qualification or have prior knowledge and skills at level 2 in Site Carpentry. Trainers need to be aware of prior learning that has taken place and use this information to structure individualised learning where appropriate.

Trainers should make the best use of available resources to provide learners the opportunity to learn using a wide range of activities that could include lectures, discussions, self-study, research opportunities, visits and exhibitions and practical training to stimulate, motivate and educate the learner.

Employer engagement

Employer engagement is an excellent way to maximise the learners' experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Employers could also contribute to learners' progress by acting as guest speakers.

Useful support for links with industry is given below:

- National Education and Business Partnership Network – www.nebpn.org
- Work Experience/Workplace Learning Frameworks – Centre for Education and Industry (CEI University of Warwick) - www.warwick.ac.uk/wie/ce
- Construction Industry Joint Council - Working rule agreement for the construction Industry UK www.builders.org.uk/resources/nfb/000/322/301/May_2013_WRA_Final_Version.pdf
- Born to build - www.borntobuild.org.uk
- The UK Contractors Group - www.ukcg.org.uk/representing-industry/open-doors-weekend

Suggested learning resources

Books

Level 3 Diploma in Site Carpentry & Bench Joinery Published by City and Guilds, 2015 ISBN-10: 0851933041 ISBN-13: 978-0851933047	Burdfield, M, Redfern, S, Fearn C et al
Level 2 Diploma in Site Carpentry & Bench Joinery Published by City and Guilds, 2014 ISBN-10: 085193269X ISBN-13: 978-0851932699	Fearn C, Raine, S, Taylor, T & Burdfield, M

Websites

Health and Safety Executive

<http://www.hse.gov.uk>

Unit 304

Fixing stairs with turns

UAN:	Y/507/3250
Level:	3
GLH:	90

What is this unit about?

The purpose of this unit is for learners to develop a thorough understanding of the principles and processes of constructing intermediate landings and fixing stairs with turns ensuring that all work undertaken complies with the current building regulations.

Stairs are generally manufactured off-site and fitted in-situ during the first fix stage. Learners are required to develop a good understanding of installing stairs with turns that include the construction of landings and the fitting of newel posts, handrails and balustrading.

A thorough knowledge of the building regulations is required to ensure stairs are installed in line with the requirements specified within this document.

Learning outcomes

In this unit, learners will

1. understand stair types and component terminology
2. fix a flight of stairs with a turn.

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome 1: Understand stair types and component terminology

Topic 1.1: Types and arrangements of turning staircases

Topic 1.2: Component parts associated with turning staircases and landings

Topic 1.1

Learners must understand and recognise the types and arrangements of stairs with turns.

Types

Newel and non-newel stairs, closed string, cut strings, open riser

Newel stairs

Straight flight, quarter-space, half-space, winding, dog-leg

Non-newel stairs

Geometrical

Arrangements

Quarter and half space landing, quarter and half space of tapered steps

Topic 1.2

Learners must understand and recognise the component parts of stairs constructed with quarter turns and landings.

Stair components

Balusters, balustrade, brackets, cap, carriage piece, cover fillet, bullnose step, commode step, curtail step, drop newel, easing, finial, flier, flight, glue blocks, going, handrail, newel post, nosing, rise, riser, scotia, shaped bottom step, spandrel, splayed step, staircase, step, string capping, baluster spacers, strings, tread, winders, wreathed handrail and wreathed string

Landing components

Landing (quarter and half space), apron lining, bulkhead, floor covering, joists (trimmer, trimmed, trimming, common), joist hangers, strutting

Learning outcome 2: Fix a flight of stairs with a turn

Topic 2.1: Building regulations

Topic 2.2: Fixing stairs with turns

Topic 2.3: Shaped steps

Topic 2.4: Guarding stairs

Topic 2.1

Learners must be aware of the building regulations (part K) and be able to apply them when fixing stairs with quarter turns.

- Stair regulations (private, general access and utility), rise and going, pitch, handrail heights for flights and landings, guarding of stairs (balustrading), minimum headroom, width of stairs, landings

Topic 2.2

Learners need to demonstrate the knowledge and understanding required to work safely and be able to prepare appropriate risk and method statements when fixing stairs with quarter turns. They will be able to undertake initial checks to ensure the stairs will fit and will plan the sequence of installation.

Learners also need to understand the physical difficulties that are encountered when maneuvering and fixing stairs into position as part of a team. Learners must fit and fix stairs with turns.

Health and Safety Regulations

PPE, PUWER, Working at Height, Manual handling

Topic 2.3

Learners need to be aware of the various styles of shaped steps used when fitting stairs with quarter turns, and be able to fit them.

Shaped steps

Bullnose, semi-circular, splayed-end, curtail-ended, commode and winder /tapered steps

Topic 2.4

Learners need to have the knowledge and understanding and be able to fix and joint handrails to newels and scrolls to staircases with quarter turns.

Handrails

Straight and continuous, wreathed, swan neck, ramp, easing, knee, goose neck, scroll (horizontal and vertical)

Jointing

Draw bored, handrail connectors

Learners need to have an understanding of the jointing systems and spacing arrangements used to fix balusters when fixing stairs with quarter turns.

Jointing

Dovetailed, stub tenoned or secured into grooves with spacers

Spacing arrangement

0 and $\frac{1}{2}$ positions and $\frac{1}{4}$ and $\frac{3}{4}$ positions

Guidance for delivery

Learners should have either completed the level 2 qualification or have prior knowledge and skills at level 2 in Site Carpentry. Tutors need to be aware of prior learning that has taken place and use this information to structure individualised learning where appropriate.

Tutors should make the best use of available resources to provide learners the opportunity to learn using a wide range of activities that could include lectures, discussions, self-study, research opportunities, visits and exhibitions and practical training to stimulate, motivate and educate the learner.

Employer engagement

Employer engagement is an excellent way to maximise the learners' experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Employers could also contribute to learners' progress by acting as guest speakers.

Useful support for links with industry is given below:

- National Education and Business Partnership Network – www.nebpn.org
- Work Experience/Workplace Learning Frameworks – Centre for Education and Industry (CEI University of Warwick) - www.warwick.ac.uk/wie/ce
- Construction Industry Joint Council - Working rule agreement for the construction Industry UK www.builders.org.uk/resources/nfb/000/322/301/May_2013_WRA_Final_Version.pdf
- Born to build - www.borntobuild.org.uk
- The UK Contractors Group - www.ukcg.org.uk/representing-industry/open-doors-weekend

Suggested learning resources

Books

Level 3 Diploma in Site Carpentry & Bench Joinery
Published by City and Guilds, 2015
ISBN-10: 0851933041
ISBN-13: 978-0851933047

Burdfield, M, Redfern, S, Fearn C et al

Level 2 Diploma in Site Carpentry & Bench Joinery
Published by City and Guilds, 2014
ISBN-10: 085193269X
ISBN-13: 978-0851932699

Fearn C, Raine, S, Taylor, T & Burdfield, M

Websites

Health and Safety Executive
Building regulations

<http://www.hse.gov.uk>
<http://www.planningportal.gov.uk>

UAN:	D/507/3251
Level:	2
GLH:	30

What is this unit about?

The aim of this unit is to provide the learner with the knowledge to carry out maintenance and repair of structural and non-structural carpentry and joinery in accordance with the current Health and Safety legislation and Building Regulations.

Timber is a natural material and therefore deteriorates over time and requires maintenance to keep it in a serviceable condition. Good maintenance reduces the need for repair or replacement. At times replacement is not cost effective, or may not be allowed due to planning restrictions, so sections of joinery will be machined (such as a cill) and spliced in.

Maintenance is an important skill and some organisations specialise in this area. The maintenance and repair sector represents the largest proportion of the construction industry therefore offers good employment opportunities.

Learning outcomes

In this unit, learners will

1. understand the causes and prevention of deterioration and decay
2. understand how to repair and maintain carpentry.

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome 1: Understand the causes and prevention of deterioration and decay

Topic 1.1: Causes of deterioration and decay

Topic 1.2: Types of maintenance

Topic 1.3: Costs and implications

Topic 1.1

Learners must be able to describe the factors that cause damage and deterioration, how this may be identified and the remedial actions to be taken. It is important that they know that the root cause of the damage, which will need to be removed where possible before repair begins.

Factors causing deterioration and decay

Weathering (UV, water damage/ingress, storm damage), wet and dry rot, infestation, wear and tear, design faults, poor workmanship, poor maintenance

Topic 1.2

Learners must understand that planned maintenance is essential to maximise the lifespan on timber products and components. Learners must understand the purpose of a maintenance schedule and describe the difference between planned and unplanned (condition based) maintenance.

Topic 1.3

Learners should understand the viability and cost implications of repairing versus replacing structural or non-structural components. Learners must be aware of local authority planning constraints that may be in place and how this effects decisions: conservation, heritage, listed buildings.

Learning outcome 2: Understand how to repair and maintain carpentry

Topic 2.1: Structural

Topic 2.2: Non-structural

Topic 2.1

Learners should understand how to repair and/or replace structures.

- Structural joists, rafters, flat roof and joist coverings

They must also understand the need for temporary support systems and how they are used.

Learners should understand the processes for repairing and replacing.

- Splicing/scarfing, piecing in, splint repairs

Topic 2.2

Learners should understand how to repair and or replace non structural components.

- soffits including guttering, frames, stairs, mouldings, door and window components and associated ironmongery (traditional/high performance)

Learners should understand the processes for repairing and replacing.

- splicing/scarfing, piecing in, adjustment, lubrication.

Guidance for delivery

The learner should have either completed the level 2 qualification or have prior knowledge and skills at level 2 in Site Carpentry. Tutors need to be aware of prior learning that has taken place and use this information to structure individualised learning where appropriate.

Tutors should make the best use of available resources to provide learners the opportunity to learn using a wide range of activities that could include lectures, discussions, self-study, research opportunities, visits and exhibitions to stimulate, motivate and educate the learner.

Employer engagement

Employer engagement is an excellent way to maximise the learners' experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Employers could also contribute to learners' progress by acting as guest speakers.

Useful support for links with industry is given below:

- National Education and Business Partnership Network – **www.nebpn.org**
- Work Experience/Workplace Learning Frameworks – Centre for Education and Industry (CEI University of Warwick) - **www.warwick.ac.uk/wie/cei**
- Construction Industry Joint Council - Working rule agreement for the construction Industry UK **www.builders.org.uk/resources/nfb/000/322/301/May_2013_WRA_Final_Version.pdf**
- Born to build - **www.borntobuild.org.uk**
- The UK Contractors Group - **www.ukcg.org.uk/representing-industry/open-doors-weekend**

Suggested learning resources

Books

Level 3 Diploma in Site Carpentry & Bench Joinery Published by City and Guilds, 2015 ISBN-10: 0851933041 ISBN-13: 978-0851933047	Burdfield, M, Redfern, S, Fearn C et al
Level 2 Diploma in Site Carpentry & Bench Joinery Published by City and Guilds, 2014 ISBN-10: 085193269X ISBN-13: 978-0851932699	Fearn C, Raine, S, Taylor, T & Burdfield, M

Websites

Building regulations	http://www.bwf.org.uk/
Planning Portal	http://www.planningportal.gov.uk
Health and Safety Executive	http://www.hse.gov.uk

Unit 306

Set up and use fixed and transportable machinery

UAN:	H/507/3252
Level:	3
GLH:	90

What is this unit about?

The purpose of this unit is to have a thorough understanding of wood machining processes commonly undertaken within our industry. Whether working in a joiner shop or on site, machinery is used to enable cutting processes to be carried out efficiently and accurately. It is essential therefore that future operatives are trained how to set them up and use them safely and know their limitations.

This unit provides learners with the knowledge required to inspect, carry out basic maintenance, set up and use sawing, planing and mortice machines safely.

Learning outcomes

In this unit, learners will

1. understand and use legislation and documentation relating to the safe use of woodworking machinery
2. carry out the inspection and maintenance of fixed and transportable machinery
3. use sawing machines
4. use planing machines
5. use a morticing machine.

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome 1: Understand and use legislation and documentation relating to the safe use of woodworking machinery

Topic 1.1: Legislation

Topic 1.2: Manufacturer's literature and maintenance schedules

Topic 1.3: Supervision and training records

Topic 1.4: Risk assessments

Topic 1.1

Learners must understand the legislation relating to the safe use of woodworking machinery.

- Provision and Use of Work Equipment Regulations (PUWER)
- Approved Code of Practice safe use of woodworking machinery (ACOP)
- The Control of Noise at Work Regulations
- Control of Substances Hazardous to Health (COSHH)
- Additional guidance including HSE Woodwork information sheets and British Woodworking Federation(BWF) machine safety cards

Topic 1.2

Learners must understand the importance of manufacturer's information and the information it contains in relation to the safe adjustment, use and maintenance of the machine.

Learners must also understand the requirement and use of maintenance schedules and how the frequency and nature of the maintenance is determined through risk assessment in accordance with PUWER.

Learners must be able to consult, use and complete documentation where required, prior to carrying out inspection, maintenance and changing tooling activities on woodworking machinery.

Topic 1.3

Learners must understand the requirement of supervision and training and how poor supervision and inadequate training are the two main causes of accidents. Learners must understand to who and when training should be given in accordance with PUWER.

Topic 1.4

Learners must understand the nature of risks associated with using woodworking machines and the environment that the work is carried out in. This should also include

- good housekeeping
- training
- guarding
- tooling
- raking
- manual handling.

Learners must be able to produce a risk assessment in relation to inspection, maintenance and operating woodworking machinery.

Learning outcome 2: Carry out the inspection and maintenance of fixed and transportable machinery

Topic 2.1: Inspection, fault diagnosis and maintenance

Topic 2.2: Change tooling

Topic 2.1

Learners must understand the requirement for fault diagnosis and maintenance of machinery ensuring that they are safe prior to use and are kept in efficient working order and good repair. The learner must also be aware of the required action to take if a machine is found to be unsafe.

- change tooling, maintenance log

Learners must be able to carry out inspection and maintenance activities on woodworking machinery using appropriate supporting documentation and appropriate tools. The learner must be able to leave the machine in a safe condition having carried out pre-start checks.

In-depth machine maintenance is not a requirement and should be limited to condition based maintenance of moving parts.

Fixed or transportable machines

- Rip, crosscut and narrow bandsaws
- Surface planer, thicknesser and combination planers
- Morticer

Maintenance

- Moving parts
- Adjustments
- Change tooling

Topic 2.2

Learners must be able to select appropriate hand tools and equipment to change machine tooling. Learners must follow the risk assessment and consult the manufacturer's literature. Pre-start checks must be carried out and the machine left in an isolated and safe condition. Learners must have an understanding of how tooling cuts for the machines listed.

Tooling

- Circular saw blades (rip and crosscut)
- Band saw blade
- Planing knives
- Mortice chisel and auger

Learning outcome 3: Use sawing machines

Topic 3.1: Saw materials to size and shape

Topic 3.2: Use safety aids, features and extraction

Topic 3.3: Use workpiece support

Topic 3.1

Learners must understand how to select and safely set up sawing machinery to carry out ripping, cross, and curved cutting to produce sawn components to given sizes and shapes as required. They must be able to produce risk assessments enabling these operations to be carried out safely. The work should be limited to that which the machine was designed to perform safely and within the requirements of legislation.

Learners must understand how to set the guarding on machinery to carry out operations safely conforming to the ACOP. Learners must understand the requirement for extraction whether fixed or portable and its benefits to health and safety and the quality of the finished product. Learners must also understand the requirement for correct tension and guide assembly positioning when using a band saw. They must also understand how good housekeeping will impact on minimising operating risks.

Cutting operations

- Softwood sawn to width and thickness
- Manufactured board cut to given dimensions
- Tapered firings/wedges
- Arris rail/glue blocks
- Shaped components (bandsaw)
- Tenons (bandsaw)

Topic 3.2

Learners must be able to make and use safety aids facilitating safe machining operations conforming to ACOP.

Safety aids

- Push sticks
- Push blocks
- Wedge jigs
- Beveling/ glue block saddles

Learners must also be able to use manufacturers' safety features and use extraction to conform with COSHH.

Topic 3.3

The learner must understand the requirements and be able to use operational support while carrying out machining processes.

Operational Support

- Infeed/outfeed rollers/support
- Support tables
- Additional manual support

Learning outcome 4: Use planing machines

Topic 4.1: Plane timber to size and shape

Topic 4.2: Use safety aids and features

Topic 4.3: Use workpiece support

Topic 4.1

Learners must understand how to select and safely set up planing machinery to produce planed components straight and to given sizes. The work should be limited to that which the machine was designed to perform safely and within the requirements of legislation. Learners must be able to produce risk assessments enabling these operations to be carried out safely.

Learners must understand how to set the guarding on machinery to carry out operations safely conforming to the ACOP. Learners must understand the requirement for extraction whether fixed or portable and its benefits to health and safety and the quality of the finished product.

The learner must also understand how good housekeeping will impact on minimising operating risks.

Planed Components

- Faced and edged timber
- Timber brought to width and thickness
- Beveled timber

Topic 4.2

Learners must understand and be able to use push blocks to safely plane the face of short lengths of timber. They must also understand the limitations set by the ACOP to carry out operations when using a surface planer.

Topic 4.3

The learner must understand the requirement and be able to use operational support while carrying out planing operations.

Operational Support

- Infeed/outfeed rollers/support
- Additional manual support

Learning outcome 5: Use a morticing machine

Topic 5.1: Cut mortices

Topic 5.2: Use workpiece support

Topic 5.1

Learners must understand how to select and safely set up morticing machinery to produce a range of morticed components to given sizes and shapes as required. The work should be limited to that which the machine was designed to perform safely and within the requirements of legislation. Learners must be able to produce risk assessments enabling these operations to be carried out safely. They must also understand how good housekeeping will impact on minimising operating risks.

The morticing machinery should be limited to hollow square chisel morticers and not include chain morticers.

Morticed Components

- Through mortices/bridles
- Stub/blind mortices
- Haunched mortices

Topic 5.2

The learner must understand the requirements and be able to use end support while carrying out morticing operations on long lengths of timber.

Guidance for delivery

This unit should be one of the first delivered practically in this qualification as it will facilitate all training and tasks undertaken in all the other practical units. Tutors delivering this unit will have opportunities to use a wide range of techniques. Lectures, discussions, research, visits to exhibitions and workshop visits. Delivery should stimulate, motivate and educate the learner.

This unit covers the use of classical machinery found in the workshop or lighter transportable models commonly used and found on site. It will form a natural extension to portable power tool training. Training and use of the machines should make the best use of naturally occurring training activities.

Health, safety and welfare issues are paramount and should be strictly reinforced through close supervision of all activities and risk assessments must be undertaken prior to any activities taking place.

Employer engagement

Employer engagement is an excellent way to maximise the learners' experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Employers could also contribute to learners' progress by acting as guest speakers.

Seeing wood machining processes carried out in an industrial context will reinforce the significant production advantages that machines offer in work related output and reduced hand operations.

Useful support for links with industry is given below:

- National Education and Business Partnership Network – www.nebpn.org
- Work Experience/Workplace Learning Frameworks – Centre for Education and Industry (CEI University of Warwick) - www.warwick.ac.uk/wie/ce
- Construction Industry Joint Council - Working rule agreement for the construction Industry UK www.builders.org.uk/resources/nfb/000/322/301/May_2013_WRA_Final_Version.pdf
- Born to build - www.borntobuild.org.uk
- The UK Contractors Group - www.ukcg.org.uk/representing-industry/open-doors-weekend

Suggested learning resources

Books

Level 3 Diploma in Site Carpentry & Bench Joinery
Published by City and Guilds, 2015
ISBN-10: 0851933041
ISBN-13: 978-0851933047

Burdfield, M, Redfern, S, Fearn C et al

Level 2 Diploma in Site Carpentry & Bench Joinery
Published by City and Guilds, 2014
ISBN-10: 085193269X
ISBN-13: 978-0851932699

Fearn C, Raine, S, Taylor, T & Burdfield, M

Websites

Health and Safety Executive
Building regulations

<http://www.hse.gov.uk>
<http://www.planningportal.gov.uk>

Appendix 1 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centres and Training Providers homepage** on www.cityandguilds.com.

City & Guilds Centre Manual

This document provides guidance for organisations wishing to become City & Guilds approved centres, as well as information for approved centres delivering City & Guilds qualifications. It covers the centre and qualification approval process as well as providing guidance on delivery, assessment and quality assurance for approved centres.

It also details the City & Guilds requirements for ongoing centre and qualification approval, and provides examples of best practice for centres. Specifically, the document includes sections on:

- the centre and qualification approval process
- assessment, internal quality assurance and examination roles at the centre
- registration and certification of candidates
- non-compliance and malpractice
- complaints and appeals
- equal opportunities
- data protection
- management systems
- maintaining records
- internal quality assurance
- external quality assurance.

Our Quality Assurance Requirements

This document explains the requirements for the delivery, assessment and awarding of our qualifications. All centres working with City & Guilds must adopt and implement these requirements across all of their qualification provision. Specifically, this document:

- specifies the quality assurance and control requirements that apply to all centres
- sets out the basis for securing high standards, for all our qualifications and/or assessments
- details the impact on centres of non-compliance.

The **centre homepage** section of the City & Guilds website also contains useful information on

- **Walled Garden:** how to register and certificate candidates on line
- **Events:** dates and information on the latest Centre events
- **Online assessment:** how to register for e-assessments.

Useful contacts

UK learners General qualification information	E: learnersupport@cityandguilds.com
International learners General qualification information	E: intcg@cityandguilds.com
Centres Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	E: centresupport@cityandguilds.com
Single subject qualifications Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change	E: singlesubjects@cityandguilds.com
International awards Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports	E: intops@cityandguilds.com
Walled Garden Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems	E: walledgarden@cityandguilds.com
Employer Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	E: business@cityandguilds.com

Every effort has been made to ensure that the information contained in this publication is true and correct at the time of going to press. However, City & Guilds' products and services are subject to continuous development and improvement and the right is reserved to change products and services from time to time. City & Guilds cannot accept liability for loss or damage arising from the use of information in this publication.

If you have a complaint, or any suggestions for improvement about any of the services that we provide, email: **feedbackandcomplaints@cityandguilds.com**

About City & Guilds

As the UK's leading vocational education organisation, City & Guilds is leading the talent revolution by inspiring people to unlock their potential and develop their skills. City & Guilds is recognised and respected by employers across the world as a sign of quality and exceptional training.

City & Guilds Group

The City & Guilds Group is a leader in global skills development. Our purpose is to help people and organisations to develop their skills for personal and economic growth. Made up of City & Guilds, City & Guilds Kineo, The Oxford Group and ILM, we work with education providers, businesses and governments in over 100 countries.

Copyright

The content of this document is, unless otherwise indicated, © The City and Guilds of London Institute and may not be copied, reproduced or distributed without prior written consent. However, approved City & Guilds centres and candidates studying for City & Guilds qualifications may photocopy this document free of charge and/or include a PDF version of it on centre intranets on the following conditions:

- centre staff may copy the material only for the purpose of teaching candidates working towards a City & Guilds qualification, or for internal administration purposes
- candidates may copy the material only for their own use when working towards a City & Guilds qualification

The Standard Copying Conditions (see the City & Guilds website) also apply.

City & Guilds

1 Giltspur Street

London EC1A 9DD

www.cityandguilds.com
