

# Construction, Trades, Health and Safety: Study Skills



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# Introduction

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Studying, like any other form of work, requires a specific set of skills. Whether you're learning at college, home, university, or in prison, study skills will help you enjoy your studies and get the most out of the learning process. This short course aims to improve skills such as notetaking, academic writing, and exam revision, so that you can hit the ground running in your future studies.

This course also aims to give you a taste of what it is like to study construction, trades (such as plumber and electrician), health and safety, at level 2 and above. Courses in these two areas are very popular amongst prisoner learners. Knowledge of skills in construction can be of great benefit when maintaining or improving the property you live or work in, and when carrying out community-based projects. These courses increase your employment prospects in the construction industry, and having accredited qualifications can help you advertise your skills to construction firms and site managers.

Distance learning requires motivation and commitment. We hope that by giving you a taste of what the process is like, this course will help you work out whether you want to apply for a full course or not. To find out what courses PET offers funding for, please look at our *Distance Learning Curriculum*.

Unlike classroom or lecture-based courses, distance learning is centred around independent study. Students receive all their course materials at the beginning of the course and stay in touch with tutors by email or letter.

Studying in prison 'gave me a positive outlook on life again and gave me focus on what I could achieve while I was behind bars. I threw myself into advancing my education because here I had the time as well as the opportunity to do so.'

Prisoner learner funded by PET

Being able to study in your own time and at your own pace has many advantages. It allows students to fit studying around other commitments such as jobs, family responsibilities, and prison sentences. Not being in a classroom means you can't be disrupted by other students or discouraged by bad teaching. For prisoner learners it gives access to courses and qualifications that aren't offered by prison education departments.

Distance learning can also be challenging. There's no teacher to remind you when to work or to guide you through the trickier parts of your subject. This course anticipates some of these challenges, highlighting them in advance so you can approach them with confidence.

Study skills are very transferable. Good academic writing, for instance, is persuasive and effective, attributes that are useful in many other contexts such as writing a cover letter for a job application or a blog post about training techniques. Good time management, the first chapter in this course, could help you create a nutrition schedule for a client or balance time commitments in your personal life. Many of the skills in this course are highly valued by employers and can also be helpful in everyday life, whether you are solving logistical problems or helping family and friends.

We hope that you enjoy this course and that it gives you motivation and confidence to go forward with your studies.

# CHAPTER 1

## Time Management

Efficient time management is key to successfully completing a distance learning course. With no teacher or lecturer on hand to take you through each part of the course, it is your responsibility to structure your learning process.

This is a good opportunity to organise your studies in the way that suits you best. It can be daunting however, and sometimes students don't know where to start or they lose track midway through the course. This chapter sets out some tips and principles for successful time management so you can make the most of independent learning.

### I. The three main principles of time management: O R A

There are three principles underpinning successful time management that can be summed up by the **ORA acronym**:

**O**rganised

**R**ealistic

**A**daptable

#### stay ORGANISED

- Make an organised plan at the beginning of your course. If you want to progress through your course materials and hand in assignments on time, you will need a clear idea what work you want to get done each week.
- Students usually receive all the course materials when they start a course. If you organise this material into manageable chunks and decide on clear deadlines, then you will set yourself up to progress smoothly.
- In the section below, we look at the moment when you start a distance learning course, taking a the Learn Plumbing Installation Theory Course (Level 2) as our example.

#### be REALISTIC

- If you make your study targets too ambitious then your progress might feel disappointing, even if you've been working hard. Keep things realistic.
- How much time do you have to study each day? How long does it take you to read a chapter of your textbook? Calculate what you can realistically achieve in the available time.

- There is an exercise later in this chapter in which we will look at what a realistic daily schedule might look like, focusing on one day in a typical Category B prison.

### keep ADAPTABLE

- Adaptability is a key ingredient to successful time management. Change and adapt your plans when you need to.
- Prison life can be unexpected. A sudden lockdown can make the library or computer facilities inaccessible. Cell searches can disrupt carefully organised papers and interrupt a study session.
- Studying is rarely a smooth journey, in or out of prison. Illness and bad news are obstacles that students face in all walks of life. Don't be hard on yourself if your studies don't go as planned, this is normal. We will talk below about how to build in **breathing time** to your studies, to make your schedule more adaptable.

### The Wider Picture

These principles are helpful when managing time in all areas of our lives. Food plans and training schedules that have been abandoned a few weeks in are a familiar story. Usually they could have been happily maintained if the plan had been more realistic and better organised to start with, and if the person doing it had been more prepared to adapt to changes in their circumstances or perspective.

A key part of the job for many professionals in construction and trades is creating a plan of action and following it. Often this plan will fit into a wider construction schedule or overall site plan. The final part of this chapter sets out some of the ways in which time management skills can transfer to this aspect of professional life.

## II. Receiving your course materials

On starting a distance learning course you will be sent all the materials you need. Seeing all the knowledge and concepts gathered in one place can be an exciting moment.

Some people get overwhelmed by the volume of information, whilst others dive straight in to the bit of the course they find most interesting, but end up getting lost through a haphazard approach. Here are six strategies to make the best possible start to the course and help process the moment in which you receive all the materials.

### 1. Chunking

- Break your course down into manageable chunks and complete them one-by-one. As well as making your work feel more achievable, it is satisfying to tick each task off.



- Creating a schedule with specific chunks of work will help you to focus on the work in hand rather than being side-tracked by other parts of the course.
- Often your course provider will have done some of this ‘chunking’ for you, splitting the course material up into separate units and sections. Use their divisions and **adapt them to your own learning speed and schedule**.
- This method can also be applied to individual tasks and assignments. Instead of saying ‘I need to write this essay in two weeks’, break it up into four sections: research; planning; writing; editing. Give yourself a set amount of time for each one and stick to the schedule.
- Once you’ve finished each task on your schedule, stop studying and relax – you’ve earned it.

## 2. Work to deadlines

- Deadlines are the dates by which you must complete a piece of work. These deadlines might be for submitting assignments, such as reports and essays, or sitting exams.
- Find out the deadlines your course contains straight away. You don’t want to be taken by surprise later.
- Write down each deadline and create a list.
- It is very important to get your assignments completed and sent in on time. A good piece of work handed in on time is much more valuable than a perfect piece of work that misses the deadline.
- If you have job interviews in the future then your experience and ability in meeting academic deadlines is an attractive thing to talk about – most employers highly value this skill.



## 3. Create your own deadlines

- Some courses have very flexible timings, allowing you to set your own deadlines.
- Work out how you want to structure your course. Perhaps you want to complete it before you transfer to another prison, or maybe you want to hand in the next essay before the end of the month.
- In order to make your own deadlines, calculate how much work is needed to complete each task. This is a good time to remember the ‘Be realistic’ principle – choose a date that is achievable, based on how much study time you have available. Remember to add these deadlines to your overall list.



- If your deadlines are self-imposed then stick to them whenever possible, treating them as official. Very occasionally you will have to adapt them – unexpected circumstances affect the best-laid plans.

#### **4. Eyes on the prize**

Stick your list of deadlines up on the wall or inside the front cover of your notebook. Seeing these dates regularly is a good way to keep them in your mind and maintain motivation.

#### **5. Get a diary**

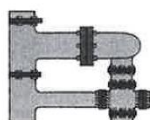
- Having a diary is a useful way to structure time and can help you relax as you don't have to know your different dates off the top of your head.
- Write your main deadlines in the diary together with any major non-study activities, such as visits, medical appointments, family birthdays, or security category reviews. This will help you balance your commitments and plan your studies accordingly.
- Diaries are sometimes available from prison chaplains or education departments; other prisons include diaries on their list of accepted postal items.
- If you can't get hold of a diary then get a notebook and make a simple one of your own.

#### **6. Build breathing room into your schedule**

- Including free space in your timetable means that if something unexpected happens you have breathing room.
- This might take the form of an empty studying slot once a fortnight, with no content scheduled for it. Or in your long-term schedule you can earmark a couple of free weeks before a major deadline.
- You can use these spaces to catch up on work you missed or to do some extra studying on a topic you found especially difficult.
- If you have got everything done on time, then so much the better – take the free space as time off, or hand in your work early.

Now let's look at a sample from the Learn Plumbing Installation Theory Course. This course is a National Vocational Qualification (NVQ); completing these courses allow you to prove your competence in a specific occupation, and there are numerous NVQs that look at different construction and trades-based skillsets. This sample is from the User Guide to Technical Training that students receive when they start this plumbing course:

<b>Learn Plumbing NVQ Level 2 Technical Training</b>	
<b>Section Number</b>	<b>Module Title</b>
1	What is Plumbing? + Introduction to NVQ Level 2
2	Health, Safety and Tools
3	Piping Installation
4	Domestic Systems
5	Installation of Sanitary Appliances, Maintenance, Taps, Valves and Leak Repair
6	Sanitary Accommodation Layout and Design
7	Showers
8	Water Regulations
9	Customer Service and Working Relationships
10	Installation and Maintenance of Sheet Lead Weatherings
11	Completed Module Summary Answer Papers
12	Records of Achievement



### **Preface**

In developing this Study Course Learn Plumbing is responding to industry demands for relevant, focused training and assessment. This is to provide confidence in the minds of the general public in a highly skilled, efficient and well-qualified workforce.

In the course materials each module is followed by some summary multiple-choice questions. The first module, for instance, contains 12 pages of detailed information and explanatory diagrams, followed by 2 pages of multiple-choice questions. The questions allow you to test your knowledge of the material you've just read. If the questions are too difficult when you first attempt them then you should read back through the module more carefully, taking notes as you go.

Once you have completed the questions in each module you send the answer sheets to your course tutor. These will be marked and feedback returned to you, together with the next module of the course.

As you can see from the User Guide above, the course providers ('Learn Plumbing', <http://www.learnplumbing.co.uk/>) have done some chunking and scheduling for students already, splitting the course into 10 modules. They suggest that students spend 1 week on each module, apart from modules 3 to 5 which they estimate will take 2 weeks each.

But their suggested schedule is only an example – it is designed for a student who is studying around a full-time job, fitting academic work into weekends and evenings. Is this a sensible schedule for you? How much study time do you have available during your average week?

When you receive your course materials you should make your own schedule based on how much study-time you have available and how quickly you want to do the course. In the following section we will look at daily schedules to show **ways of calculating this**.

Before you calculate how long the course will take you, it's a good idea to do the first module and see how long it takes you. This way you can create a study schedule that accurately predicts how long it will take you to progress through the separate modules.

### III. Calculating your available study time

Available study time is dictated by circumstances such as our health, pre-existing work commitments, and facility opening hours. But study time is also shaped by our **personal approaches to learning**.

- Do you work best in short bursts, or in longer sessions?
- How regularly do you like to take breaks?
- When do you find it easiest to study?

Here is an average Thursday in a Category B prison for a prisoner on Standard Level of the IEP Scheme. Let's call the example prisoner Rhys.

Rhys' Thursday Timetable	
8.00	Unlock for breakfast and medication
8.30	Lock up, preparation for movement to off-wing activity
8.45	Move to work – laundry job
11.30	Return from work
11.40	Lunch
12.20	Lock up
1.30	Move to off-wing activity
1.45	Work – laundry job
4.30	Association: 45 minutes gym, 15 minutes socialising
5.30	Tea
6.00	Lockup
6.30	Watch football match
8.30	Chat to cellmate and play cards
10.00	Write letter to family
11.00	Reading and sleep

Rhys is starting a distance learning course and wants to calculate how much time he can put aside every day to study. Here are two possible daily schedules for Rhys, with the study sessions highlighted in yellow. **Which timetable option looks better to you?**

Thursday Studying: Option 1	
8.00	Unlock for breakfast and medication
8.30	Lock up, preparation for movement
8.45	Move to work – laundry job
11.30	Return from work
11.40	Lunch and 20 minutes study
12.20	Lock up
1.30	Move to off-wing activity
1.45	Work – laundry job
4.30	Association: study
5.30	Tea
6.00	Lockup
6.30	Study
10.00	Chat to cellmate
10.30	Write letter to family
11.30	Reading and sleep
Total study time: 4 hours 20 mins	

Thursday Studying: Option 2	
7.15	Study
8.00	Unlock for breakfast and medication
8.30	Lock up, preparation for movement
8.45	Move to work – laundry job
11.30	Return from work
11.40	Lunch
12.20	Lock up
1.30	Move to off-wing activity
1.45	Work – laundry job
4.30	Association: 45 minutes gym 15 minutes socialising
5.30	Tea
6.00	Lockup
6.30	Study, including ten minute break
8.00	Watch final 30 minutes of football match
8.30	Chat to cellmate and play cards
10.00	Write letter to family
11.00	Reading and sleep
Total study time: 2 hours 5 minutes	

The first timetable has much more study time, but it is unbalanced and it will be **hard to maintain**. Rhys would sacrifice his work out and let study cut into his lunch. He would no longer be socialising during association and has less time to chat to his cellmate. Rhys's evening study session involves 3.5 hours continuous study with no breaks!

A **balanced timetable** is key for enjoyment of studying and **keeping up motivation**.

- Keep up regular exercise. Physical exertion increases brain function and reduces stress – this will benefit your studies in the long run.
- Studying is often a solitary activity and it is good to mix it up with socialising.
- If studying cuts into your sleep and mealtimes then your energy levels and productivity are likely to drop.

The second timetable is much more realistic. Rhys would do 45 minutes study in the morning, because he enjoys doing a short task before he gets tired by his laundry job. He has scheduled a break during his evening session because it helps his concentration and productivity. Instead of skipping the football entirely he can look forward to watching the game's final half hour, a good way to switch off and let his brain wind down after his academic work.

If Rhys follows the second timetable then he is much more likely to complete his course with the best grades he can and enjoy the process of getting there.

Here are three tips for how to organise your own daily timetable:

### **1. Look after your mental health and physical wellbeing**

- Studying is hard work, but it should be enjoyable and bring pleasure as you learn new ideas and expand your horizons.
- Balance your study with the other things you care about.

### **2. What time of day suits you best?**

- Some people prefer to study during the working hours of 9-5, some prefer late in the evening, others first thing after waking up.
- If there is a time that is more productive for you then arrange your schedule accordingly.

### **3. Take breaks**

- Just like taking a rest between hard efforts in the gym, your mind needs to have a rest between concentrating for long periods. Get up and move around, leaving your screen or your books for a few minutes. Stretch, make a hot drink, socialise briefly. When you return to your books you will be re-invigorated.
- Whether your breaks are 3 or 10 minutes long, set a time by which you must be working again.
- Successful public figures sometimes boast in interviews and autobiographies about their single-minded focus. Whilst this makes a good story, the reality is that the best athletes, writers, entrepreneurs, and leaders have a balanced work schedule that avoids exhaustion and mental burn out. The work required to perform at our best in any setting requires longevity, and unbalanced schedules cannot be maintained for long.
- If we integrate our studying into a balanced lifestyle then we will protect our motivation, energy levels, and might finish the course hungry to embark on another one.

**\*\*\* Exercise: Write a study timetable for one of your own average weekdays \*\*\***

Write out your routine. When might you be able to study?

[illegible]



- Take your total study time and multiply it by 5 to get your rough hours available for the week.
- Do you prefer to work on weekdays or over the weekend?
- Always remember to take one or two days off a week, so that you can relax and return to your work with renewed energy.

Return to the **O R A acronym** to optimise the daily study schedule:

### Keep ORGANISED

- Set times for breaks
- **Keep track** of your progress. At the end of each day make a note of what you achieved, and which academic tasks you want to achieve the following day.
- If a task or section of your course is proving unexpectedly difficult then adapt your overall schedule to give it more time. Don't get too stuck – if it is still proving tricky after this extra time then move on so that your subsequent tasks don't suffer.
- Keep returning to your long-term schedule to make sure you're on track. If not, then make changes to your schedule, or adjust the way in which you are working during the week.

### Be REALISTIC

- Don't try to follow a timetable you won't be able to sustain.
- Be realistic about how much each piece of work takes – an entire assignment can't be written in one hour! Make a note of how long it takes you to carry out different academic tasks and adjust your schedule accordingly.
- When time is tight, **prioritise**. Which topic needs the most revision? What are the basic things you need to do to meet your assignment deadline? Complete these first – anything else is a bonus.

### Be ADAPTABLE

- If you have a deadline approaching and you need to increase your hours, then skip a gym session or work late one evening.
- If you are exhausted then take a couple of days off and re-write your timetable to make it more sustainable
- If you are stressed by another event in your life and struggling to work, then take time off. Mental stress can make it difficult to concentrate. Return to studying when you are ready or reduce your schedule to short, very achievable sessions and simple tasks.

#### IV. Professional uses of time management skills

Many of the time management skills outlined in this chapter can be transferred easily from studying to professional life in construction and trades.

Tradespeople sometimes need to balance different jobs at the same time, taking into account different factors such as building accessibility, fitting in with other tradespeople who are working on the same sites, or sourcing the necessary materials and parts, and so on.

When planning large-scale jobs, the different tasks need to be scheduled in the right sequence. If you are in a position of responsibility, whether that is organising a few people working on a small building or managing a larger construction site, then a variety of schedules need to be co-ordinated.

In all these scenarios the O R A principles are essential.

##### Keep organised:

- Come up with an organised and detailed plan at the start of the project. This will help you create an accurate budget and timescale for your client.
- Health and safety plans should be drawn up well in advance so that all the necessary protective clothing and equipment can be put in place before the project starts.
- If you are managing people then a well-organised plan will help to communicate the different roles and timings to everyone involved.
- Do regular checks on the equipment, personnel, and progress of the project. This will help you to spot any potential problems before they arise and to allow you to re-organise plans to work around any issues.

##### Be realistic:

- Schedule an appropriate amount of time for each task. Being overly ambitious can lead to stress and fatigue, heightening the risk of mistakes and accidents.
- Build in some breathing space at regular points so that if any tasks end up taking longer than expected then the plan can absorb these delays without the finish-date being postponed.



**Stay adaptable:**

- Unforeseen events occur all the time. A crucial part or building material might be delivered late from the supplier. A piece of equipment could break or a tradesperson might miss a few days' work through illness. Be prepared to adapt and adjust the plan around these events.
- Re-arrange tasks to make sure that time isn't wasted or get ahead with other parts of the job.
- Schedule in time for communicating with others involved in the project. This will allow everyone to share information so that the different parts of the project can adapt to progress elsewhere.

## CHAPTER 2

# Reading and Noting

Distance learning is centred around reading course materials that contain the knowledge and techniques you need to pass your qualification. A reading-based learning process has many benefits – unlike a lesson or lecture, you can pause on concepts that interest you and speed through passages you find easy or already know. Areas of completely new vocabulary and knowledge often takes longer to process.

This volume of reading can be tough. The key to absorbing all this information is to turn reading from being a passive process of scanning the page into an **active process** that allows you to connect the text's meaning to your own perspective and experience.

Notetaking is an important ingredient in active reading. Good notes will represent data and ideas in a way that suits your personal learning style and that serves your immediate **academic objectives**.

The notes you make are useful not only for transforming reading into a more active process, but they also create a resource that you can return to later. **Well-organised and purposeful notes** will help you write the best possible assignments and ensure that exam revision is efficient and easy.

This chapter looks at these twin skills of reading and notetaking, suggesting strategies for maximum effectiveness. Once we've covered the main points, there is a reading exercise about nutrition and recovery, in which you can try putting some of these techniques into practice.

### I. Directed Reading

Before reading a text decide the purpose of your reading, in order to give it direction. Different purposes require different reading styles, which vary in terms of speed, precision and how you filter information. This table outlines the main different purposes and styles of directed reading:

<b>Purpose</b>	<b>Style</b>
Introducing yourself to the topic	This can be done in a relaxed way. Enjoy discovering new ideas and the pleasure of learning.
Learning new vocab and terminology	Find <b>each unfamiliar term</b> in the text and <b>make a note</b> of it. Make sure you have fully understood the meaning of these words before continuing.
Researching for an assignment	<b>Skim read</b> over material that isn't relevant, then go more slowly when you find a passage or section that relates closely to your assignment question. (see more in <i>Further research skills</i> below.)
Reading for argument	When reading a newspaper article or a chapter, it is often useful to <b>condense the writer's argument</b> . Once you've <b>isolated their key points</b> , you can engage their argument with confidence.
Reading for exam revision	Go back over the course materials or, even better, the notes you made from these course materials. Look out for any information that might come up in the exam and pause on any fact or idea that you haven't yet learnt. Once you've isolated this material, try testing yourself on it. Past papers will help you with all these steps. There is some further advice on exam revision in Chapter 4 of this course.
Reading critically	Consider the author's motivation, especially when reading texts such as newspaper articles or blog posts. Are they trying to inform their reader or entertain them? Are they biased at all? Watch out for arguments that don't offer any evidence to support their claims, these are often based on opinion rather than research.

If your reading speed slows down, or you're losing interest in the text, then remind yourself of your purpose. This will help keep your reading style efficient and focused, speeding things up again.

The divisions between the different types of reading are not always fixed. Sometimes you will be reading a text for multiple purposes, such as researching for an assignment but also looking out for new vocab at the same time.

## II. General Advice on Notetaking

### Why take notes?

- Notes can help you read and listen in a more concentrated and engaged way
- Writing, even if you are copying things out, engages your comprehension and memory
- Making notes keeps your brain active and encourages creativity
- You can structure information and rephrase it in your own style, making it easier to understand and remember

### Organise your notes:

- Some simple organising of your notes will be a big advantage when you return to them in the future, allowing you to write better assignments and revise easier
- Remember to do the basics -- put a title at the top of each new section of notes write the date on each piece of work
- If you have loose bits of paper and notes, collect them in a file and label the file so you know what is inside
- Once you have finished a notebook, make a note on the cover about the contents, so you can locate the right notebook speedily

### Creative forms of notetaking

- Lists of words and ideas are a useful way of organising information, but sometimes more creative methods of notetaking are advantageous.
- Brainstorms are a good way to create links between different ideas and to gather information around a question or topic. Students and professionals often use brainstorms near the beginning of an assignment or a project.
- In Chapter 4 there is a detailed example of a brainstorm.

### Referencing and Plagiarism

- When you take notes from a source, make sure you write down the author, title, year and place of publication. It is important to keep this information so you can credit your sources in your assignment and avoid plagiarism
- Keep track of whether your notes are verbatim (word-for-word) quotes, or whether you are putting the material in your own words.
- See Chapter 4 for an explanation of correct referencing with examples

### III. Harnessing the jargon

Readers often complain about the unnecessary use of technical terms, or 'jargon'. But when used effectively in the right context, specialised vocabulary is very useful. It can facilitate **technical discussion** and **rapid communication** of ideas and details.

**Learning the relevant technical terms in your subject area** (such as anatomical parts or different types of nutrients) will give you access to more complex texts and discussions.

Whenever you come across unknown terms in your reading, **stop and find out what they mean**. Course materials will sometimes have a glossary of technical terms, or the word will have been explained in an earlier chapter. If there isn't an explanation in your course materials, look the word up next time you have access to a dictionary or a computer.

**Make a note of key vocabulary for your course** – this creates a valuable resource that you can refer back to later, either when writing your assignments or preparing for exams. If you've forgotten what a term means, then your list of key vocabulary will save you time by explaining it straight away.

**Employ these technical terms in your own writing**, whether that is an assignment or an exam. **Correct usage** will demonstrate your knowledge and expertise, and you should be rewarded by the person grading your work.

**Preparing for exams:** which specialised vocabulary do you tend to forget? Make a list of these elusive words and look over them once or twice a day in the run-up to your exam.



### IV. \* \* \* \* Exercise: Reading and Notetaking \* \* \* \*

Let's imagine you are doing a course on building construction and you have a coursework question on roofing. Your course materials contain the basic information you need but you have decided to do some independent research in order to bring in some external knowledge to your answer. You have found a book in your prison library called *Fundamentals of building construction: materials and methods* (2014) by Edward Allen and Joseph Iano that has a chapter on roofing.

Below is an extract from the introduction to this chapter. Give yourself 20 minutes or so to read the text and make notes. Structure your notes following the two techniques we discussed above:

1. Take out 4 – 6 key points that are relevant for your assignment (*reading for argument*)
2. Identify any key vocabulary that you want to learn (*learning new vocab and terminology*)



Put some of the key points in your own words. If you copy out anything word-for-word then remember to put it in quotation marks.

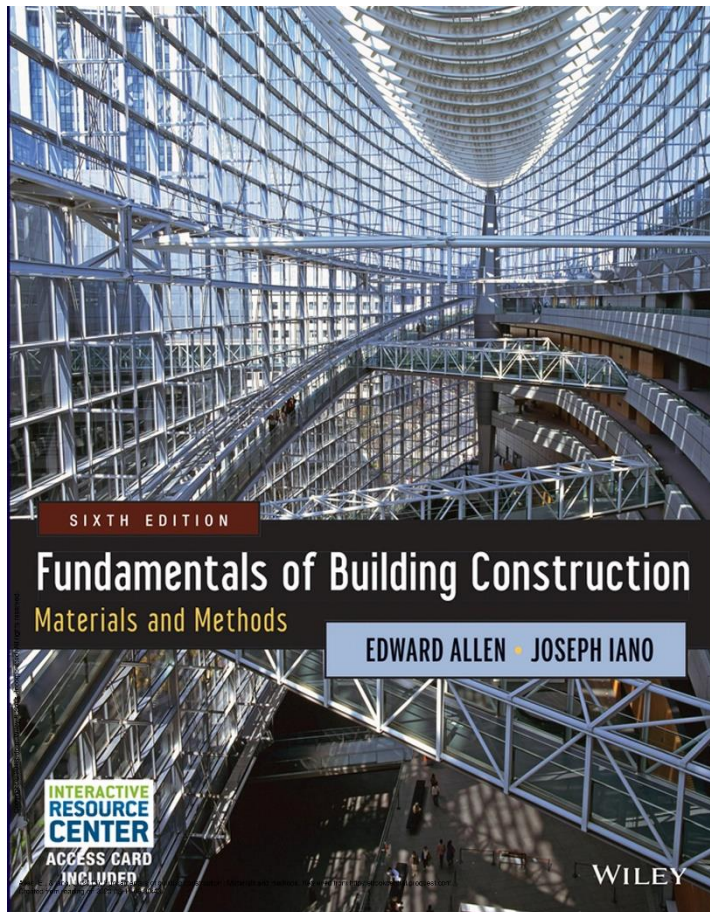
Once you have done this task, compare your notes with the example answers at the end of the course materials.

**Edward Allen and Joseph Iano, *Fundamentals of building construction: materials and methods, Sixth Edition* (New York: Wiley, 2014).**

Extract from Chapter 16, 'Roofing', pp.662-663.

A building's roof is its first line of defense against the weather, protecting it from rain, snow, and sun. The roof helps to insulate the building from extremes of heat and cold and to control the accompanying problems of air leakage and water vapor condensation. And like any frontline defender, it must itself take the brunt of the attack: A roof is subject to the most intense solar radiation of any part of a building. At midday, the sun broils a roof with radiated heat and ultraviolet light. On clear nights, a roof radiates heat to the blackness of space and becomes colder than the surrounding air. From noon to midnight of the same day, it is possible for the surface temperature of a roof to vary from near boiling to below freezing. In cold climates, snow and ice cover a roof after winter storms, and cycles of freezing and thawing gnaw at the materials of the roof. A roof is vital to the sheltering function of a building, yet it is singularly vulnerable to the destructive forces of nature.

Roofs can be covered with many different materials. These can be organized conveniently into two groups: those that work on *steep roofs* and those that work on *low-slope roofs*, those that are nearly flat. The distinction is important: A steep roof drains itself quickly of water, giving wind and gravity little opportunity to push or pull water through the roofing material. Therefore, steep roofs can be covered in roofing materials that are fabricated in small, overlapping units—shingles of wood, slate, or artificial composition; tiles of fired clay or concrete; or even tightly wrapped bundles of reeds, leaves, or grasses. There are several advantages to these materials: Many of them are inexpensive. The small individual units are easy to handle and install. Repair of damage to the roof is easy. The effects of thermal expansion and contraction, and of movements in the structure that supports the roof, are minimized by the ability of the small roofing units to move with respect to one another. Water vapor vents itself easily from the interior of the building through the loose joints in the roofing material. In addition, a steep roof of well-chosen materials skillfully installed can be a delight to the eye.



Low-slope roofs have none of these advantages. Water drains relatively slowly from surfaces, and small errors in design or construction can cause them to trap puddles of standing water. The membranes that cover low-slope roofs must be absolutely watertight. Even small punctures, tears, or gaps in seams, caused by defects in construction, physical wear and tear, or movements within the building structure and its interior, can allow significant quantities of water to enter the building structure and its interior, with potentially disastrous results. Or, water vapor pressure from within the building can blister and

rupture the membrane. But low-slope roofs also have overriding advantages: A low-slope roof can cover a building of any horizontal dimension, whereas a steep roof becomes uneconomically tall when used on a very broad building. A building with a low slope roof has a much simpler geometry that is often less expensive to construct. Low-slope roofs, when appropriately detailed, can also serve as balconies, decks, patios, and even landscaped gardens or parks.

### Low-Slope Roofs

A low-slope roof (often referred to, inaccurately, as a flat roof) is usually defined as one whose slope is less than 2:12, or 17 percent. It is a highly interactive assembly made up of multiple components. The *roof deck* is the structural surface that supports the roof. *Thermal insulation* is installed to slow the passage of heat into and out of the building. [...] The *roof membrane* is the impervious sheet of material that keeps water out of the building. Additional layers within the assembly may increase resistance to fire, protect soft insulation boards from damage by foot traffic, or separate replacement roof materials from older, incompatible existing layers. *Drainage* components, such as roof drains, gutter, and downspouts, remove the water that runs off the membrane. Around the membrane's edges and wherever it is penetrated by pipes, vents, expansion joints, electrical conduits, or roof hatches,

special *flashings* and details must be designed and installed to prevent water penetration.

## New Vocab

[illegible]

## Key points

This image shows a full page of primary-ruled paper. It features multiple sets of three horizontal dashed lines, which are commonly used in elementary school notebooks to guide handwriting. The lines are evenly spaced and extend across the width of the page. There is no text or other markings on the paper.

## V. Further research skills: Key words / Skim reading / Using indexes

- When researching for essays and reports, we often need to consult multiple different sources. These can add up to a large amount of text and there isn't time to read every word.
- This is where **skim-reading** comes in
  - Choose some key words from your assignment topic, then skim-read your texts, looking for instances of these (or related) words
  - Keep your eyes moving quickly and then pause whenever you see a key word, reading this passage of text more carefully and slowly
- Similarly, you can identify relevant passages from books by **using the index** – the list of key terms at the back.
  - The index functions in a similar way to the Contents Page, splitting a book into different topics and ideas, but in a much more detailed fashion
  - Sometimes the index will show you that the book contains very little information connected to your task. This is useful because it stops you wasting time on an unhelpful source and you can immediately start looking for a more relevant one.
  - The index contains page numbers. Make a list of relevant pages and then you can read them one-by-one, ticking them off the list as you go. Making sense of the pages using the surrounding context, if necessary.
- Skim-reading and index-searching are crucial skills and are regularly used by effective researchers whether they are high school students or professors.

### Example: Using an index

Clare is doing a course in construction materials and building maintenance. She is answering the following assignment question: *How is concrete used in construction and what should be considered regarding its long-term upkeep?*

After searching for relevant sources in her prison library, Clare has found a book called *Building Inspection Manual: A Guide for Building Professionals for Maintenance, Safety, and Assessment* (New York: Momentum Press, 2014) by Karl F. Schimd. She has looked up one of her keywords, 'concrete', in the index.

To the right is a sample from the index. You can see that Clare has found several relevant index entries.

Next she needs to

- read the pages listed next to these words (make a list and tick them off, one by one)
- take notes on anything useful for her assignment that they contain

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## CHAPTER 3

# Academic Writing: Clear Communication

Some assessments in construction-related courses are in multiple choice format or require short answers of one sentence or so. At other points in these courses you have to write longer passages of text ranging from a couple of paragraphs up to full essays, whether as part of an exam paper or for coursework. The proportion of writing increases in courses that are Level 3 and above.

Academic writing requires more than just knowledge of the topic – you will need to be able to communicate this knowledge effectively. This chapter sets out the basics of good academic writing, looking at the underpinning principles and the detailed aspects such as spelling and grammar. The next chapter will look at wider issues such as how to plan an essay and use supporting evidence.

Many of these strategies are directly transferable to other forms of writing. The ability to communicate clear and well-structured information is beneficial in many situations such as health and safety reports, business plans, emails to friends, job applications, and blog posts.

### I. The four principles of good academic writing

#### 1. Clarity

Make your points clearly and concisely (giving all the key information but without using unnecessary words). It is better to use two sentences that can be clearly understood than five sentences that come across as confused or include irrelevant information. A clear message will help the reader understand your argument.

The clearest writing uses sentences that are short or medium in length. Overly long sentences should be split up into shorter ones. In longer pieces of writing break the text up into paragraphs, making it easier to read.

#### 2. Objectivity

In face-to-face conversation we are often interested in people's instinctive opinions and the personal sides to a story. But good academic writing is very different because it aims to be objective and unbiased. Make sure that your statements have evidence to back them up.

A good way to show your objectivity in longer essays is to put forward both sides of an argument and then weigh up which one is more convincing. If you are simply following your gut feeling then you are unlikely to convince your reader.



### 3. Purpose

Every paragraph you write should be focused on a specific topic or point. A paragraph containing three unconnected ideas will be difficult to follow, whereas a clear sense of direction helps your reader. When editing an essay, you can cut out words or sentences that don't contribute to your purpose or message.

Remember to keep your tone appropriate for your purpose. Academic writing requires a relatively formal tone, so avoid using informal language such as slang.



### 4. Evidence

Bring in evidence to support your answers whenever possible. This might take the form of specialist vocabulary, a statistic or a quotation. Evidence demonstrates your knowledge of the topic and builds trust with your reader.

## II. Spelling, Punctuation and Grammar

Using correct spelling, punctuation and grammar will make your text easier to read and help the reader understand the points you are making. Here are some simple tips for improving these aspects of your writing:

### 1. Capital letters

These are needed:

- At the beginning of each sentence
- For names of people (such as Peter or Fatima)
- For titles (such as Mrs Doubtfire or Doctor Jones)
- For names of places, from villages and cities up to countries and continents (for example Brighton, Romania, Asia)

- For names of companies or organisations (such as the Co-operative supermarket or Bristol Rovers F.C.)
- For days of the week, months and festival days (for example Monday, August, Christmas and Diwali)

## 2. Commonly misspelled words

If there are words that you often misspell then **make a list** of them and put it somewhere that you can see easily, such as inside the front of your notebook or on the wall next to where you write. When writing you can look at the list to check you are spelling these words correctly. Eventually the correct spellings should become habitual.

## 3. Proofreading

- ‘Proof-reading’ is the process when you go back through a piece of writing, looking for any mistakes in spelling, grammar, and punctuation, and correcting them.
- Try reading your writing aloud. This is an effective way to spot grammar and syntax errors: you will often hear when something is wrong. Make a note of this then correct the text.
- Leave a few minutes at the end of your exams to go through your answers, editing and proofreading them. You will be surprised at how many simple mistakes you are able to catch and correct.
- For longer pieces of coursework and assignments it is important to schedule in time for proofreading before you submit them.

## 4. Learning difficulties

Learning difficulties such as dyslexia can make spelling and grammar more challenging. But this should not be an obstacle to achieving your goals. There are people with learning difficulties working at the highest levels of the construction industry. Here are some techniques for improving your academic writing if you have a learning difficulty:

- If you are writing on a computer then use the spell-check function.
- Set aside some time every day or two to read printed words from a magazine or a book – these will increase your recognition of correct spelling and grammatical structures, helping your own writing.
- If you have written an important assignment or document then get a friend to check it over for any spelling and grammar mistakes before you send it off. Ask them to comment only on spelling and grammar and not to discuss the content, this will ensure that all the content remains your own work and you can’t be accused of cheating.
- Compile a list of words that you regularly misspell, as discussed above. Before submitting your assignment put aside time to check your text for these words, correcting them where needed.

- Consider telling your distance learning tutor that you have learning difficulties. This can help them to understand why you have strengths in some areas but find other aspects more challenging. It will also inform them that spelling mistakes are not a result of you being careless.
- Examinations often have provision for students with learning difficulties – this might take the form of computing facilities or extra time to complete the exam. Enquire about this in advance so arrangements can be made.
- When you are proofreading your work, you can use the ‘read aloud’ or ‘speak’ function in Microsoft Word – this can help to flag up misspelled or wrongly chosen words because you will hear the pronunciation is wrong or the sentence doesn’t sound right.



### III. Apostrophes:

Incorrect or missing apostrophes are one of the most common mistakes in the English language. Although many people get them wrong, in fact the rules are relatively simple. There are only ever two reasons to use an apostrophe: **possession** and **contraction**.

#### a) Apostrophes for contraction

These are used to show that letters have been removed from a word, usually because it has been joined to another word. In these instances the word has been shortened or ‘contracted.’ Common examples include:

*it is* → *it's*

*do not → don't*

*could not → couldn't*

*I have made → I've made*

*you are → you're*

*we will → we'll*

*let us go → let's go*

Here are a couple of examples in context:

*It is the best equipment for the job. → It's the best equipment for the job.*

*You are not a responsible site manager until you have implemented the health and safety protocols. → You're not a responsible site manager until you've implemented the health and safety protocols.*

Contractions usually indicate a conversational tone. Whilst this is appropriate for some forms of writing, such as journalism or informal emails, academic writing has a more formal tone and so usually all the words should be written in full.

## **b) Possessive apostrophes**

The second use of apostrophes is to indicate possession, showing that something *belongs* to someone. Possessive apostrophes are often used after names of people, institutions and places. Some examples:

*Newcastle's best skip hire.*

*Catherine's next project.*

*Your client's budget.*

*The electrician's skillset.*

## **Plural possessive apostrophes:**

If there is more than one person or object doing the possessing then the apostrophe is placed *after* the "s" instead of before it. For example:

*The site workers' canteen.*

Placing the apostrophe after the "s" shows us that the canteen belongs to more than one worker.

**The number of objects being possessed is not relevant** to the placement of the apostrophe. The only thing that concerns us is how many people, places, or organisations are doing the possessing – one or several? For example:

*London's 5 best scaffolding companies.*

There is only one London so the apostrophe goes *before* the “s”, it doesn’t matter if we are writing about one scaffolding company or ten.

### c) Common apostrophe errors:

#### ➤ Placing the plural apostrophe in the wrong place for singular and plural

For example a sign that reads:

*Jims’ toolbox.*

By placing the apostrophe after the “s” the sign mistakenly suggests that the toolbox belongs to many Jims, whereas in fact there is only one owner. The number of objects being possessed (a toolbox, in this case) is irrelevant.

#### ➤ Using apostrophes when you don’t need them

Incorrectly placed apostrophes are confusing for readers. If you are in doubt about whether or not to use an apostrophe, check that you are using it either to indicate possession or contraction. If neither of these reasons apply then you don’t need to use one.

#### ➤ Its/It’s, Your/You’re, Their/They’re

You *cannot* use a possessive apostrophe with the words ‘it’, ‘your’ or ‘they’, only ever an apostrophe of contraction (showing that the words have been shorted from ‘it is’, ‘you are’ or ‘they are’). For example:

*The architectural firm has won its first prize.* Even though the prize belongs to the architectural firm, we cannot use possessive apostrophe with the word ‘it’.

If you are unsure about whether to use an apostrophe when you are writing ‘its’, try expanding the word to ‘it is’. If it makes sense, then it is a contraction of ‘it is’ and needs an apostrophe. If you can’t then it is possessive and doesn’t need an apostrophe. For example:

*The construction company has lost it’s license.* → *The construction company has lost it is license.* This clearly doesn’t make sense, so we know that the apostrophe was a mistake and should be removed.

*It’s not the best way to mix concrete.* → *It is not the best way to mix concrete.* This does make sense, so we can see this is an apostrophe of contraction and the sentence is correct.

\* \* \* \* **Exercise: Apostrophes and Punctuation** \* \* \* \*

**Task** Split this passage up into sentences of an appropriate length, adding capital letters, full stops, commas and apostrophes. Watch out for the apostrophes, there should be **four** of them. Once you've finished your answer compare it to the example corrected version at the end of the course.

this section sets out some different types of timber and their main uses in construction this knowledge is useful whether youre ordering materials for a large construction project or building a small extension on a house rough sawn timber comes straight from the sawmill its rough appearance means its suitable for internal structural use rather than visible features for visible features finished timber is appropriate this has been planed so that it is smooth and flat making it easier on the eye and safe to touch the acronym PAR planed all round designates a plank that has been planed on all sides you will want to decide whether to use hardwood from deciduous trees or softwood from coniferous trees depending on a projects requirements hardwoods tend to have a higher density and hardness than softwoods although there are exceptions to this such as balsa timber is vulnerable to decay particular if it is exposed to moisture or unusually dry conditions decay can be prevented by painting the wood or permeating it with a preservative for very small-scale projects preservative can be applied manually usually in multiple coats to maximise protection for commercial projects pre-preserved wood should be purchased this timber has been treated with chemical preservative applied through vacuum or pressure methods the visual properties of different types of wood should be considered when planning external features in customized projects for individual clients such a wooden worktop surfaces in a kitchen or an exposed wooden mantelpiece then the clients preferences should be taken into account and they can be shown samples

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A blank sheet of lined paper with horizontal dashed lines for writing. The lines are evenly spaced and extend across the width of the page. The page is framed by a solid black border.

## CHAPTER 4

# Essays and Exams

This chapter looks at some of the larger aspects of academic writing, such as making sure to answer the question fully and the brainstorm method for planning essays. At the end, we turn to exam revision and how to use the revision card technique.

It's worth considering how these skills could help you in other contexts. Many jobs require writing a report or an email that successfully answers a specific question or brief. Learning how to memorise facts, figures, and ideas are useful for situations such as job interviews or public speaking.

### IV. Answering the question

The quickest route to getting high marks in your essays and exams is to make sure that you answer the question. You need to understand the question before you start planning and writing the answer. Make sure you address each different part of the question, not just the bit that interests you most.

Identifying the **keywords** and **question phrasing** in each task is a tried-and-tested method. These can provide a structure to your answer and, in the case of coursework essays, help you to plan your research.

Here's an example question from an exam paper

**Question 7:** List and explain the main health and safety risks involved when using electrical equipment on a construction site. (8 marks)

First of all let's look at the **question phrasing**:

- **'List and explain'** – the examiners want you to go through the main risks one-by-one. Don't get stuck explaining one risk in too much depth and then fail to include the other risks. In order to **'explain'** each risk show what the particular dangers are. It's not sufficient simply to state that high voltage is one risk. You need to explain that it places construction workers at risk of electrocution if electrical cables aren't properly insulated and devices such as fuses and circuit-breakers installed. Electrocution can cause cardiac arrest, breathing trouble, muscle spasms and burns.
- This question phrasing can help to structure your answer – each paragraph can outline one main risk and give an explanation.

Now let's look at the **keywords**:

- 'health and safety risks'
- 'electrical equipment' – refer to some specific items of electrical equipment such as power tools and lighting systems
- 'construction site' – make sure your answer brings in details that are specific to a construction site rather than another setting. One example would be the combustible materials on a construction site being at risk of sparks from electrical equipment. Another example might be the need to make sure that different contractors are using well-maintained equipment.

Make sure that your answer addresses all the keywords in the question. There's no point demonstrating your detailed knowledge about the health risks of different voltages if you don't connect this to the equipment used in construction. Similarly, you won't be able to get full marks if you don't respond to the question phrasing: one or two risks won't constitute a 'list', make sure you give at least three or four risks.

Here is another question. What are the **keywords** and **question phrasing** here?

**Question 6.2:** Outline the key emergency procedures that should be followed if someone has come into contact with an overhead electrical line.

**Question phrasing:**

- 'Outline'

**Keywords:**

- key emergency procedures
- come into contact
- overhead electrical line

The question phrasing 'outline' shows that you need to cover the main procedures, just selecting one or two will not be enough. Remember to respond to the keywords – there's no point talking about preventative measures if the examiner has asked you about the emergency procedures. Make sure that you give some details that are specific to a 'overhead electrical line' – how might this differ from someone being electrocuted by a faulty piece of equipment or a buried cable? These details could include asking emergency services to contact the line's owner, keeping people away from the area if the live wire is touching the ground, and making sure that vehicles don't pass under the wire if it has been damaged.

\* \* \* \* **Exercise: Answering the Question** \* \* \* \*

Let's look at are two more questions. Identify the **question phrasing** and **keywords**. See the back for the answers.

**Question 8:** Identify two chronic effects and two acute effects of exposure to excessive noise. (4 marks)

**Question 19:** Give four safe working practices that should be adopted in a construction site where work is being done on high scaffolding. (4 marks)

## Assessment criteria

The assessment criteria explain what is being tested in exams and assignments, showing you what the person marking your work is looking for. It is useful to read these when they are available in order to make sure that your work satisfies the criteria.

With certain courses the assessment criteria are included in the course materials. In other courses they can be found on the course provider's website.

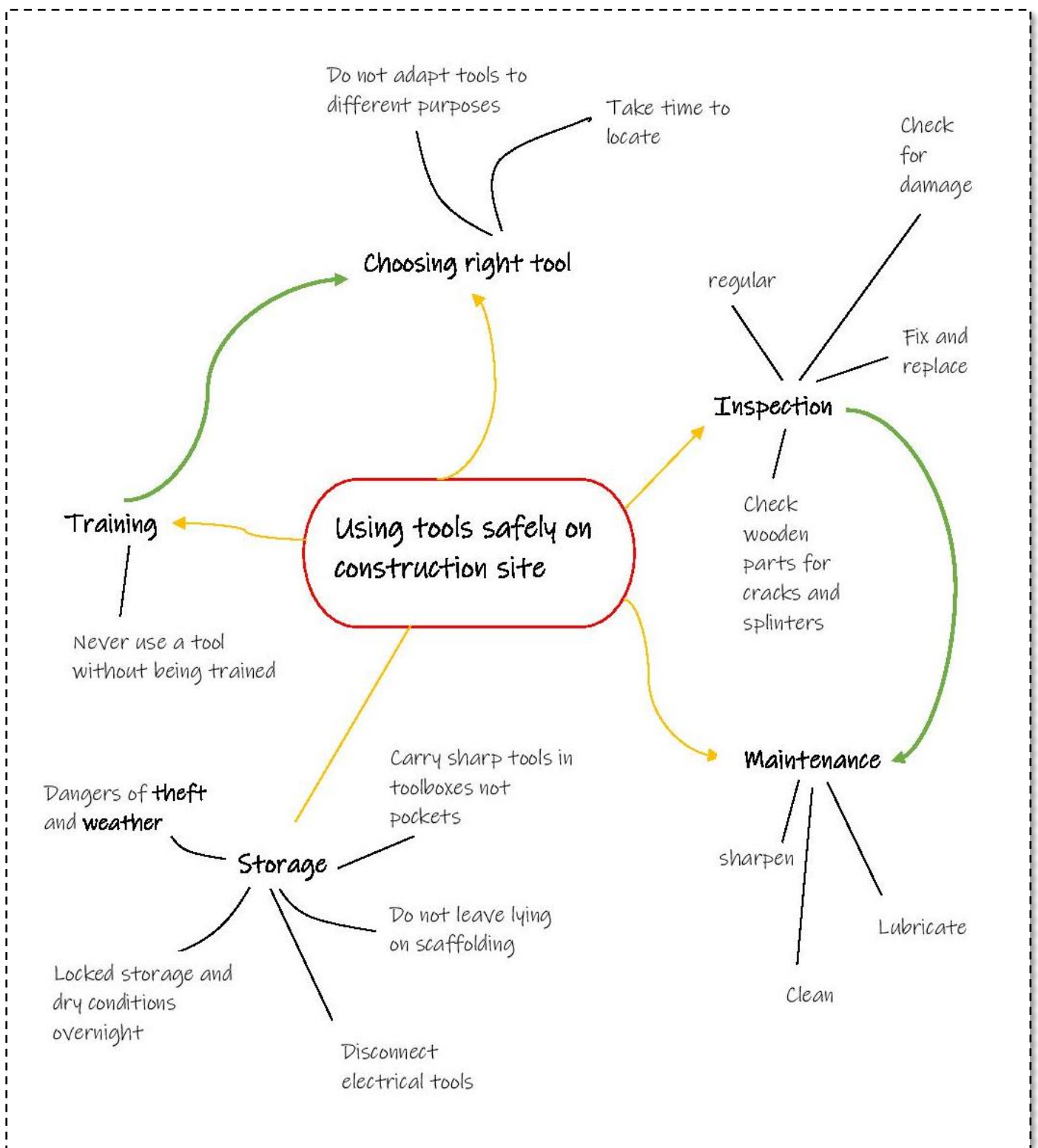
Familiarise yourself with the assessment criteria before major assignments or exams, so that you know what you are being tested on. In general, it's worth remembering that your marker will be looking for you to demonstrate the knowledge that you've gained in the course so far.

## V. Collecting thoughts and planning an answer

### a) Mind-maps and brainstorming

Once you have worked out what a question means, a good way to start an essay is to create a brainstorm (also called a mindmap). For shorter exam questions where you are under tight time constraints you won't have time to do this, but for longer exams questions and coursework essays brainstorms are a useful way to organise your thoughts. Here is an example of what a brainstorm might look like:

**Question 14:** Outline the ways in which tools should be used safely on a construction site (8 marks).



You can see that the person writing this brainstorm has written down the question and then assembled five main ideas around it. They have then thought through the relevant information they know and then noted it down around each idea.

One great advantage of mindmaps is that you can collect scattered bits of information on one page, allowing you to organise ideas in clusters and see connections. Their freeform structure can be good for sparking creativity and is well suited to people who think visually.

The connections between different ideas (such as inspection and maintenance) can help you to structure your answer – make sure these paragraphs follow each other.

Not everything on a mindmap might make it into the final written answer – putting everything on one page like this allows you to decide what is most relevant and what you can leave out. Notice that the question asks you to ‘*Outline the ways*’. The key will be to cover the main points; if you have to leave something out, then you could skip some of the details.

## **b) Planning an essay**

A more structured way to plan an essay is to make headings for each paragraph topic and then under each heading briefly note the main facts and ideas that relate to that topic.

This is a good type of plan to create shortly before you start writing. It’s especially useful for long coursework essays when there is a lot of information that needs to be shaped into a coherent structure.

Sometimes once you’ve written down the different paragraph headings you will begin to see that there are better ways to order the paragraphs and link them together.

## **c) Start writing!**

- Students writing coursework essays delay the writing process because they worry haven’t yet done enough research or worked out their precise argument.
- Don’t put off writing for too long! Many teachers advise that you start writing *before* you feel you are ready. This is because you will often discover ideas and solutions *during* the writing process.
- The danger of starting to write too late is that you won’t have enough time to include all the main points in your argument, or you won’t have time to proof-read and edit at the end.
- The earlier you start writing the easier it will be to meet your deadline. Remember, it is better to hand in a good piece of work on time than to hand in an excellent piece of work late.

## d) Writing sessions

- When you are writing make sure to take regular breaks, standing up and walking to get the blood and oxygen flowing round your body again.
- Some people find it helpful to aim for **specific targets in each writing session**, for instance aiming to write three paragraphs or to fill an A4 page. Others like to structure writing sessions by time, such as writing for 45 minutes before stopping, regardless of how many words have been written.
- It is a good idea to leave time at the end of your writing process for **editing**. Editing is the process of improving the work by making small changes or adding and deleting words and sentences. Sometimes when you read over the work you will spot simple ways to make it better.

## VI. Using Evidence and Referencing Correctly

### 1. Choose appropriate sources

The most persuasive writing uses evidence to support its claims. Bringing in outside sources is especially important when writing longer coursework essays and for courses that are level 3 and above.

Evidence from outside sources might take the form of an idea or a quotation from a respected authority on the subject (such as a construction firm or training manual written by a qualified tradesperson).

Alternatively you might incorporate some relevant data such as statistics or measurements into your argument. At Level 2 it usually isn't necessary to carry out independent research to find relevant evidence – the information you need should be contained in your course materials.

When doing independent research make sure that you are using **respected sources**. Personal blogs and tabloid newspapers (such as The Sun, The Daily Mail, The Daily Mirror) are not appropriate. Blogs are not independently verified and tabloids have low editorial standards, aiming for sensational reporting rather than factual accuracy.



The best sources to use are text books, books published by major publishers (some self-published books are brilliant but many are not), online material from respected institutions. Sometimes reputable newspapers (such as The Times, The Daily Telegraph and The Guardian) or established magazine titles (such as Construction Magazine UK) might be appropriate.

## 2. Incorporate evidence in your writing

There are two ways of including information from external sources in your own writing (known as 'citing'). You can either explain their idea in your own words or you can quote their exact words inside quotation marks. The important thing is that whichever method you use, **you must name your source**, giving the title of the book or article, the name of the author and the date it was published.

Doing this will avoid plagiarism (passing off other people's ideas as your own). Naming your source will also make sure that you get the credit for having done independent research.

Here is an example of each method, taken from an example assignment answer on the main elements of building design:

### *i. citing a source by quoting them directly:*

In contemporary building design, the walls, roof, and structure are usually separate elements that are fitted together. But this has not always been the case. Andrew Watts identifies an example in *Modern Construction Handbook* (Basel: Birkhäuser, 2016). He writes that 'In some buildings, walls, roofs and structure are a single entity as they are in medieval cathedrals, with the exception of their additional timber roofs, used to protect the structural ceiling' (p.6).

### *ii. citing a source using your own words:*

In contemporary building design, the walls, roof, and structure are usually separate elements that are fitted together. But this has not always been the case. In *Modern Construction Handbook* (Basel: Birkhäuser, 2016), Andrew Watts points out that there are buildings in which a single entity performs all these functions, for instance the stone construction of medieval cathedrals (excepting their timber part of the roof).

In general, you should only use quotations occasionally and keep them short – just quote a few words or at most a sentence or two. The person marking your work is interested in what *you* have to say. By putting other people's ideas into your own words you will demonstrate your understanding and so it is often a more impressive method of citation – just make sure you name your source.

The academic community is based on trust and sharing ideas – plagiarism undermines the system and the consequences are serious. Plagiarised work, in which the writer uses someone else's words or ideas without giving them credit, is almost always disqualified and given a fail grade.



If you are writing notes from a source, make it clear to yourself whether you are using your own words or just copying their material verbatim (word-for-word). This will help you avoid accidental plagiarism if you return to your notes later when writing an essay.

Putting material into your own words has the added benefit of increasing your understanding and memory of the content, as well as developing your vocabulary.

### 3. Longer references for Level 3 and above:

At level 3 and above, references are usually expected to include more information the source than just the basics of *author, title, and date*. Here is a brief list of what you need to include in different types of references at this level:

- the full name of the author or their surname and initials
- the title of the work
- the year it was published
- the name and location of the publisher (if it is a book)
- if your source is a magazine or journal then include the title of the magazine and the number of the volume
- for printed sources (such as book, magazine, academic journal, newspaper) include the relevant page number
- for an electronic resource write down the URL for the website and the date you accessed it

#### **Examples of correct references:**

##### *A book:*

Edward Allen and Joseph Iano, *Fundamentals of Building Construction: Materials and Methods*, 7th Edition (New York: Wiley, 2019), 27.

(the final number indicates the page you are quoting from, so this is from page 27 of Allen and Iano's book)

##### *A newspaper article:*

Diane Taylor, 'Homes in London high-rises left 'wet and cold' after cladding removed,' *The Guardian*, 22 January, 2020, 34.

##### *An online resource:*

‘Rapid rise in female tradespeople over past decade,’ *Construction Magazine UK*, accessed 11 March, 2020, <https://constructionmaguk.co.uk/rapid-rise-in-female-tradespeople-over-past-decade/>.

Once you have referenced a source in full, later references to the same source can be shortened. For example, after full references to Allen and Iano’s book or Taylor’s article, we could then use the abbreviated reference:

Allen and Iano, *Fundamentals*, 31.

Taylor, ‘Homes in London high-rises,’ 35.

### Referencing style

- There are different styles for referencing, such as Harvard style and Chicago style. The three examples above use Chicago style referencing. Courses and educational institutions often have a preferred style – find out from your course materials, the course provider’s website or your tutor style they want students to use.
- The main thing is to make sure that you are referencing consistently (i.e. using one style) and are including all necessary information about each source.
- This online resource from the University of York is an excellent guide to all the major referencing styles, with example references:

<https://www.york.ac.uk/students/studying/skills/integrity/referencing-styles/>



## VII. Exam Revision

Revising for exams is a crucial part of being a successful student and make sure you gain credit for the work you've put in during the course. Here are some simple tips:

- Start by making an overview of what you need to revise. Exam revision can be undone by forgetting to revise a crucial topic.
- Once you have an overview of what needs to be revised, draw up a timetable that uses the available time before the exam. You might, for instance, allocate three days per topic, or one day per course material chapter.
- Work on your weak spots. If there's a chapter or topic you find particularly challenging then this might need some extra days' revision.
- Put your timetable somewhere you can see it and tick off each topic as it's completed.
- Stick to your timetable. This will make sure you don't get delayed on one topic and run out of time.

### Revision cards

- Revision cards are a useful tool for learning facts, figures and specialist terminology.
- Write questions on one side of the card and the answers on the reverse. You can then use these cards to test yourself.
- If you don't have access to lined record cards then use paper or card to make your own.
- Here is an example revision card:

Topic: **Heating a building** Questions.

1.  
Give five types of appliances that are used in direct heating

2. What is the typical heat source in central heating?

3. In central heating systems, what are the main three methods of spreading heat between rooms?

4. What are the two main types of underfloor

Answers

1.  
Wood-burning stoves, open fireplaces, electric fires, gas fires, gas convectors, heaters.

2. A boiler

3. Wet heating: pipes filled with water or steam. Warm air heating: air is moved using a centrifugal fan and passes through air ducts from room to room.

4. Water pipes, usually made of polymer, or an electrical resistance elements

5. Solar water heating panels on the roof collect heat from the

\* \* \* \* **Exercise: Writing a Revision Card** \* \* \* \*

Now try turning the following extract into a revision card. Read the passage of text from *Introduction to Architectural Technology* by Pete Silver and Will McLean and take **five questions and answers** from it, writing them in the revision card boxes below. There are multiple different questions you could formulate, see the end of the course for an example set of questions and answers.

### **'Building Services / Mechanical Ventilation**

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#### **Extract Ventilation**

In both domestic and commercial buildings, rooms that generate high levels of moisture or odour, such as kitchens and bathrooms, should have an extract fan (propeller type) fitted through a window or wall. Where air needs to be ducted to reach an outside wall, it is usual to fit a 'hood' over the source of the fumes and employ an axial flow or centrifugal fan in line.

#### **Supply Ventilation**

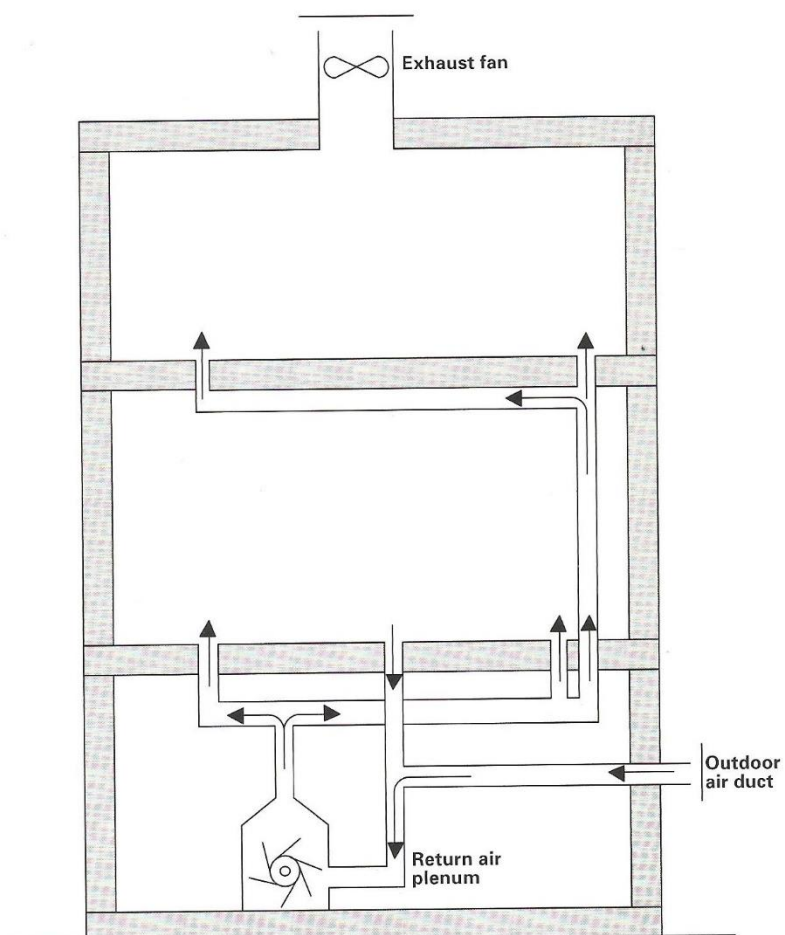
Instead of sucking stale air out of a building, fans are used to force air into it. The effect is to pressurize the internal spaces and drive the stale air out.

#### **Balanced Ventilation**

In a similar process to indirect warm air heating, combining supply and extract ventilation in a single circuit allows the system to provide a constant supply of fresh air to a space. If the supply air is cooler than the air inside the building, heat can be recovered from the warm, exhausted air by passing it over a heat exchange element,

#### **Humidity Control**

Certain levels of humidity have to be maintained in a building, because of their impact on its fabric and the different types of material being stored within, as well as for the comfort of its human occupants. An average house produces some 15 litres of water vapour per day and when warm moist air comes into contact with a cooler surface it condenses. This condensation then causes materials to decay, e.g. timber to rot, steel to rust. Encouraging natural air movement through buildings will help to reduce the potential for condensation. Mechanically, humidity levels can be raised using humidifiers or lowered using dehumidifiers. As with heating or cooling, these mechanisms may be applied directly within rooms or within the air handling unit of an air-conditioning system.'



(Text and diagram from *Introduction to Architectural Technology* (London: Laurence King, 2008), pp. 106-107.)

Topic: **Mechanical**

**Ventilation** Questions

1.

2.

3.

4.

5.

## Answers

1.

2.

3.

4.

5.



## CHAPTER 5

# Making the Most of Distance Learning

As discussed in the introduction to this course, distance learning has advantages and disadvantages compared to classroom-based education. In addition to the inbuilt challenges of distance learning, studying whilst serving a sentence in prison also brings challenges of its own. This final chapter looks at some of these, suggesting ways to overcome and work around them. Finally, we have a look at an example CVs, thinking about how courses in construction, trades, health and safety might help your future employment prospects.

### I. Resilience and Support

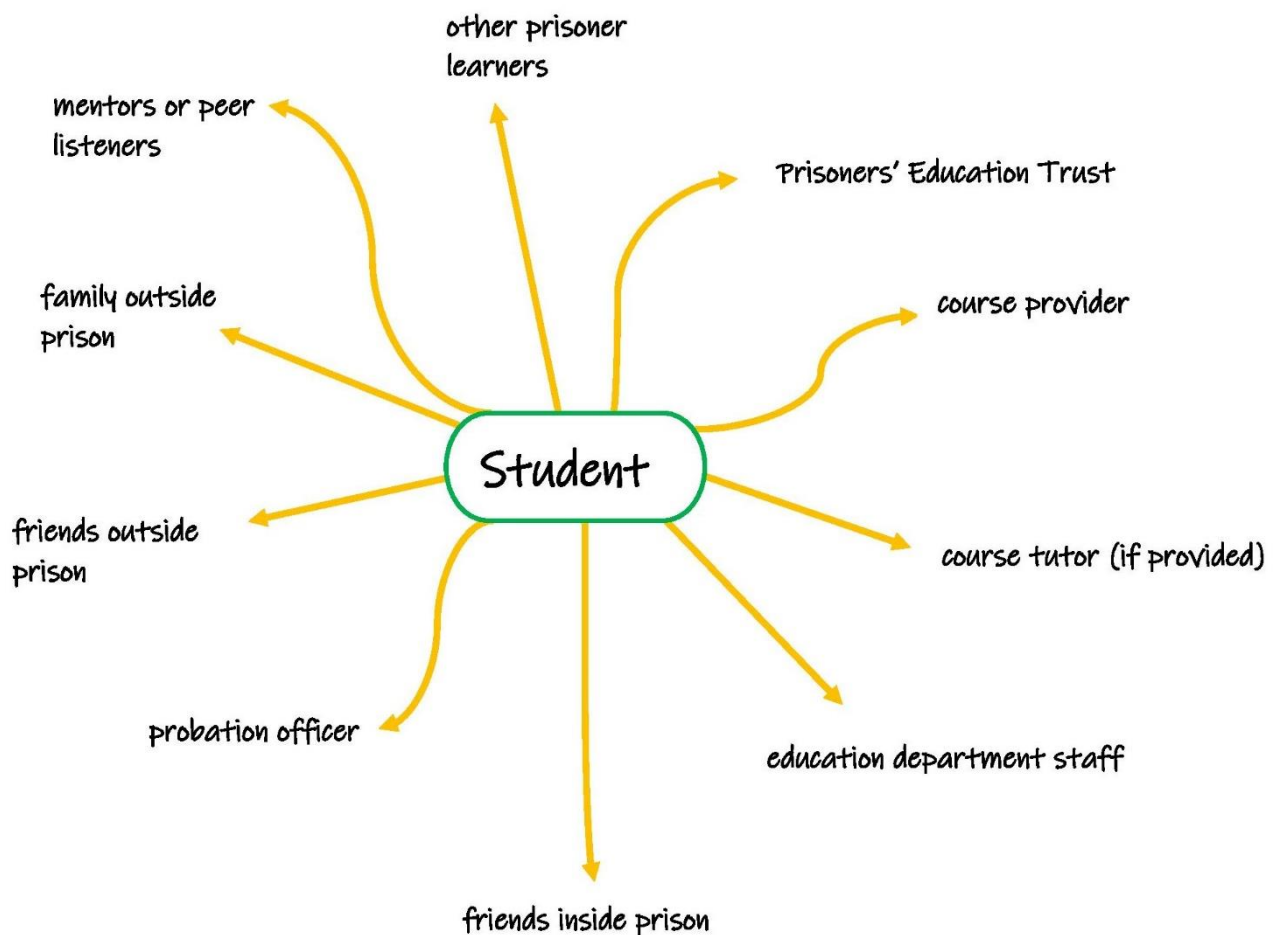
#### 1. Support Networks

- In classroom-based learning, students have a teacher and classmates with whom they can discuss their work with and ask about problems. Such points of contact are not so immediately available to distance learners, so it is a good idea to create your own support networks.
- Tell people close to you that you are taking a distance learning course. That way they can ask you how it is going, support you if it gets tough, and celebrate with you when you reach milestones.
- Talking to other prisoner learners is a good idea. They might have done a similar course to you and can share their experiences, or you might want to arrange times when you meet together in the education department for study sessions.
- If you are doing a vocational or technical qualification, there might be other prisoners who have professional experience in this area who would be happy to discuss details with you.
- Some distance learning courses have tutors you can contact or academic staff who work for the course provider. If you have a question or a problem with your course then don't hesitate to write to them.
- If the course materials don't arrive at your prison or you have problems with the course then you can write to PET at any time. Please write to:

FREEPOST, Prisoners' Education Trust, The Foundry, 17 Oval Way, London, SE11 5RR.

The 'Freepost' address means you don't need to use a stamp.

- In the map below are some suggestions of people who might form your support network:



## 2. Anxiety and Stress

- It is normal to feel some stress when pushing yourself academically. Students almost always experience stress to some degree, whatever environment they are studying in.
- The key is to manage your stress levels and make sure that they stay at a low and sustainable level.
- Talk to people you trust in your support network. It can be helpful to say things out loud and the person you talk to might have helpful advice or be familiar with similar situations.
- The answer to academic stress is often *not to do more* studying. Stress is frequently a sign that you need to take more regular breaks. Doing other activities can help you gain perspective and refresh your mind.

- Make sure you take at least one or two days off every week. You will be energised and more productive for having taken time off.
- If your studies seem unsustainable then return to your plans and adapt them to improve the situation.
- It is widely recognised that physical exercise and fresh air helps to ease anxiety and lower stress levels.
- Regular sport improves sleep patterns and the endorphins released after exercise help to lift our mood.
- LJ Flanders is the author of an excellent book called *Cell Workout* (London: Hodder & Stoughton, 2016). Part of his journey towards writing this book included doing distance learning courses whilst in HMP Pentonville. He shared helpful advice with PET about the importance of doing exercise:

'Did you know that increasing your cardio will ultimately boost energy and productivity, helping to create the right frame of mind to study? A 30-minute cardio session three times a week will yield results. It will pump extra blood to the brain, delivering the extra oxygen and nutrients it needs to perform at its maximum efficiency. Cardio also floods the brain with chemicals that enhance functions like memory, problem solving and decision making.'<sup>1</sup>

From *Prisoners' Education Trust: Learner's Handbook*, p.63

## II. Challenges of Distance Learning in Prison

Students in prison are sometimes held back by frustrating circumstances but their endeavours are no less valuable for that. In fact, by working out how to overcome these obstacles the learning process can become even more valuable.

The best employers will recognise and appreciate people who have gained qualifications in difficult circumstances. One prisoner learner went for an interview with a construction firm and reported the following experience:

'Towards the end of my sentence I was in open conditions and I went to a job interview with a construction firm. The director was amazed that I'd got these qualifications during my time in prison. He told me that I was better qualified than some of his senior staff.'

Below is a list of the obstacles to studying that often arise for distance learners in prison and some suggestions of how to work around them:

### 1. Organisation and study environment

- The confined space of a cell is not the most practical place to work, for instance having to write sitting on the bed or the floor.
- One strategy for managing this small space is to keep your papers and course materials well-organised. Label every notebook you use and keep loose papers together in a folder.
- Allocate your time wisely. Do activities that can be easily done in a cell during lockdown hours and save tasks that need a desk or a computer for when you have access to the education department.
- One previous distance learner told PET that 'I soon found a study pattern that worked for me. I'd do my reading and notetaking in my cell instead of watching TV and then do my assignments in the Distance Learning Room' (*Learner's Handbook*, p.23).
- Given that you are sharing a small space with your cellmate it is worth discussing your studies with them. Negotiate quiet times when you can study. Be prepared to compromise and work around some of their own commitments and preferences.

### 2. Short notice transfer to another prison

Courses are sometimes interrupted when students are transferred to another prison at short notice. Ideally a course can provide a helpful sense of continuity and stability in new surroundings. Here are some ways to lessen the disruption of a sudden move:

- Introduce yourself to the education department in your new prison as soon as possible and let them know you are currently doing a distance learning course funded by PET.
- If your learning materials have been left at your previous prison then ask for them to be posted to you. The education department staff can help you make this request.
- If it is impossible to get your materials posted, then ask PET staff to request a new set of course materials.<sup>1</sup>

### 3. Distractions and procrastination

- From socialising to TV, music and social media, there are numerous ways to get distracted from doing your work.

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<sup>1</sup> Query for WPP: is that correct?

- The best way round this is to schedule achievable targets for work sessions, as discussed in the Time Management part of this course, and stick to them. Put distractions out of reach and save them as a reward for when you finish your work.

#### 4. Not having the resources you want

- Sometimes your work can be held up by not having the resources you want. This might be internet access or library books when researching an assignment, or it might be computer access for when you want to listen to a tutorial online.
- Speak to the education department if you are having trouble accessing something, they might be able to source an alternative or help you find a way round the problem.
- Make the most of the resources you do have – sometimes you might be able to solve the issue by finding an alternative resource in your prison library or online. Get creative with the resources you do have access to.
- If you are lacking paper or pens then speak to your prison canteen, someone on the peer advisor or education mentoring scheme, or staff in your prison's education department.



#### 5. Receiving feedback

- One of the main forms of interaction in distance learning course is through getting written feedback on your assignments. Sometimes this can be challenging to deal

with, especially if the feedback contains unexpected criticism or isn't as constructive as you had hoped.

- Don't be disheartened by critical feedback. Remember that your course is a learning process and you are not expected to begin it as a perfect student. If you already knew all the answers at the beginning of the course then there wouldn't be much point taking it.
- Learning how to react to feedback in a positive way and improve our work accordingly is a skill in itself, one that students and professionals can gradually improve in all walks of life.
- Different students respond better to different sorts of feedback. Some of us need more encouragement whilst others need firm reminders of where they should improve.
- But tutors don't always give the type of feedback that suits us best. If you are struggling to process your feedback then concentrate on the parts of it that are most useful for you. Take two or three helpful points from the feedback and let these guide how you approach your next piece of work.
- Make the feedback work for you. If parts of it aren't helping you then don't dwell on them.
- If you want clarification about the feedback you've received then write to your tutor and ask about it.

## 6. Against perfection

- Sometimes our desire to make things perfect – whether that's your study environment or an answer to an essay question – can actually stop us achieving good work.
- The French philosopher Voltaire quoted an Italian proverb in his *Dictionary of Philosophy* (1770): 'Perfection is the enemy of good.' ('Il meglio è l'inimico del bene.')
- An example of this would be missing a deadline because you want to write the perfect assignment. Instead of handing in a good piece of work on time you've missed the deadline by chasing perfection.
- Another example would be getting so stressed about a coursework essay you are unable to do any work. Lower your expectations and write whatever you can.
- Doing the best you can is good enough.

## 7. Partial course completion

- Some distance learning courses have a 'theory' part and a 'practical' part. If the practical part requires being assessed whilst doing practical exercises, attending a workshop or training centre it won't be possible if you are still serving your sentence in closed conditions.
- This isn't a reason not to do the course. Sometimes course providers will give you up to two years to complete the practical part, and so you can do it after your sentence has ended or if you are released on temporary licence.
- If you are unable to do the practical part then you can still complete the theory section and put that on your CV.
- If you are unsure about the feasibility of a course you want to do, then please contact PET and we can advise you.

## 8. Being released from prison

- Like being transferred to another prison, the disorientation and upheaval of this process can interrupt your studies.
- Inform PET that you have been released, writing to them at the Freepost address.
- Please finish the course you have embarked on. This can provide some helpful stability in your new circumstances and make the most of the time you spent studying inside.
- If you want to pursue further education after release there is some advice on our website:

<https://www.prisonerseducation.org.uk/get-support/people-leaving-prison/continue-with-education/>

## III. Writing and Updating your CV

It is good practice to write your CV and update it when you complete a course.

If you have a target job in mind, then think about which courses will help you reach that goal and start working to build a suitable CV. Visualizing your CV can be helpful motivation for studying.

If you are applying for jobs in the future then it is useful to have an updated version of your CV already. CVs should be adapted to the specific requirements of each job, emphasising how you are suited to it. But having a template with your main accomplishments on it will give you a helpful resource to start with each time.

On the following pages is an example of how you could lay out your CV.



CV

## Joe Bloggs

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**Contact details:** 4 Southall Lane, Reading, RG9 4SZ, United Kingdom.  
07961 679400  
[joebloggs@gmail.co.uk](mailto:joebloggs@gmail.co.uk)

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### Profile

- Hardworking construction worker with an eye for detail and great track record of completing jobs on schedule
- I work equally well on independent projects or as part of a team
- Physically fit and always attentive to health and safety
- A good listener and communicator
- Excellent at following instructions and solving problems

---

### Skills

- Roofing and tiling
- Plastering
- Timber work and general carpentry
- Accurate calculations and measurements
- Blueprint reading
- Building demolition
- Maintaining safety protocols

---

### Professional Experience

#### Construction worker – CMZ Construction (2018 to present)

Duties:

- Estimating material quantities for job
- Checking on-site supplies and equipment, reporting to foreman
- Mixing mortar, plaster, and grouting
- Overseeing an apprentice
- Maintaining health and safety standards and implementing protective measures

#### Roofer on Academy project – Eliot Grayne Ltd (2017)

Duties:

- Laying roof tiles as part of team
- Installing drainage components and flashing

#### Construction worker – Aston Construction Group (2017)

Duties:



- Painted buildings (interior and exterior) using rollers, brushes, and spray guns
- Sorted, cleaned, and stored materials at the end of every shift

### **Qualifications and Education**

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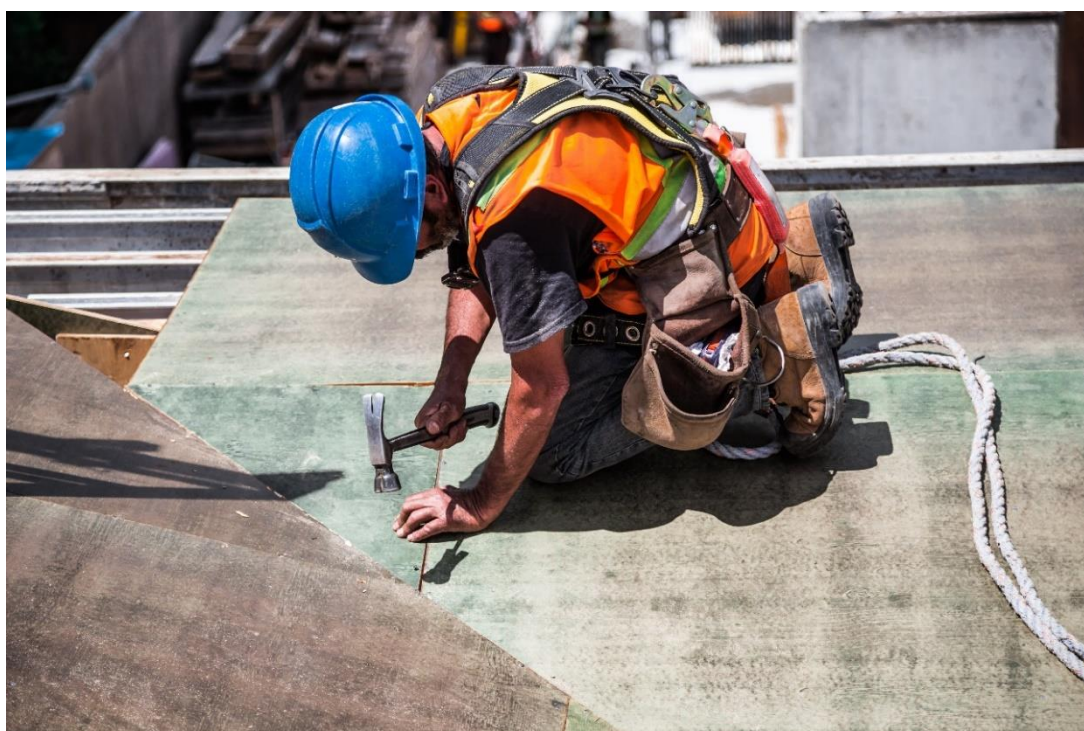
- NEBOSH National General Certificate in Occupational Safety & Health (ATM Safety) – 2016
- Roof Slating and Tiling (City and Guilds, Level 2) – 2015
- Level 3 Certificate in Construction Technologies Theory (Study House) – 2016
- Attended Windsor Boys' School from 2012-2015
  - GCSEs in Maths (B), English Language (B), English Literature (C), Chemistry (B), Physical Education (A), Geography (A\*), and French (C)

### **Hobbies and Interests**

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- Crossfit
- Parkrun (completed over 20 Parkruns and volunteered at my local Parkrun)
- Running (completed Liverpool Marathon in 2015)

**References from former employees and tutors are available on request**



# Answers to Exercises

## Chapter 2: Reading and Noting

### Exercise: Reading and Notetaking

(notes made from *Fundamentals of Building Construction* extract)

#### New Vocab

Notice that we have put the definitions in our own words apart from the first one. This one is copied word-for-word so we have put it in quotation marks.

Roof deck = 'structural surface that supports the roof'

Thermal insulation = slows down the transfer of heat between the inside and outside of the building

Roof membrane = a sheet of waterproof material that stops water coming into the building

Drainage components = parts such as guttering and drains that channels all the water that runs off the roof membrane

#### Key Points

There are many different points in the extract, here are 7 points that we chose.

1. Roofs have to withstand extreme temperatures
  2. There are two main different types of roof: steep roofs and low-slope roofs
  3. Steep roofs drain water quickly and can be covered in tiles or similar small units
  4. Tiled roofs are very resilient and can be repaired easily and cheaply
  5. Low-slope roofs don't drain as quickly and are more easily damaged
  6. Low-slope roofs can be used on buildings of many shapes and sizes, often when it would be too expensive or impractical to construct a steep roof
  7. Low-slope roofs are those with a gradient ratio of 2:12 or 17%
-

## Chapter 3. Academic Writing: Clear Communication

### Exercise: Apostrophes and Punctuation

This section sets out some different types of timber and their main uses in construction. This knowledge is useful whether you're ordering materials for a large construction project or building a small extension on a house. Rough sawn timber comes straight from the sawmill. Its rough appearance means it's suitable for internal structural use rather than visible features. For visible features finished timber is appropriate. This has been planed so that it is smooth and flat, making it easier on the eye and safe to touch. The acronym PAR (planed all round) designates a plank that has been planed on all sides. You will want to decide whether to use hardwood from deciduous trees or softwood from coniferous trees, depending on a project's requirements. Hardwoods tend to have a higher density and hardness than softwoods, although there are exceptions to this such as balsa. Timber is vulnerable to decay, particular if it is exposed to moisture or unusually dry conditions. Decay can be prevented by painting the wood or permeating it with a preservative. For very small-scale projects preservative can be applied manually, usually in multiple coats to maximise protection. For commercial projects pre-preserved wood should be purchased. This timber has been treated with chemical preservative applied through vacuum or pressure methods. The visual properties of different types of wood should be considered when planning external features. In customized projects for individual clients, such a wooden worktop surfaces in a kitchen or an exposed wooden mantelpiece, then the client's preferences should be taken into account and they can be shown samples.

Explanation of apostrophes:

*you're ordering*

**Apostrophe for contraction.** *you are* → *you're*

*it's suitable*

**Apostrophe for contraction.** *it is* → *it's*

*a project's requirements*

**Possessive apostrophe (singular).** The requirements belonging to the project. Singular because there is only one project, the number of requirements is irrelevant.

*the client's preferences*

**Possessive apostrophe (singular).** We are referring to a single example client so the apostrophe comes before the "s".

---

## Chapter 4: Essays and Exams

### Exercise: Answering the Question

#### Question 8:

##### Question phrasing:

- Identify two ... and two

##### Keywords:

- chronic effects
- acute effects
- exposure
- excessive noise

#### Question 19:

##### Question phrasing:

- Give four

##### Keywords:

- safe working practices
  - construction site
  - high scaffolding
- 

### Exercise: Writing a Revision Card

**Topic:** Mechanical Ventilation

#### Questions:

1. What type of rooms need to have extractor fans fitted?
2. How does supply ventilation work?

3. How does a balanced ventilation system work?
4. How much water vapour does an average house produce every day?
5. What risks are involved if moisture is not removed through ventilation?

**Answers:**

1. Rooms with high moisture or odour levels, for example bathrooms and kitchens
  2. Fresh air is forced into a room using a fan. Stale is driven out by the pressure.
  3. The supply of fresh air and the extraction of stale air is combined in a single circuit
  4. 15 litres of water vapour
  5. Condensation occurs and materials might decay. Wood will rot and steel will rust.
-

# Acknowledgements

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[permissions pending]

Jargon cartoon is from Evalblog, by John Gargani. Accessed 5 January 2020.  
<https://evalblog.com/2012/03/12/evaluator-watch-your-language/>

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