EXAMS AND REVISION

Exams come in different forms depending upon what they are testing. For example, writing one, two or even three essays in a given amount of time aims to test not only your knowledge but more importantly your understanding of the subject by putting forward a brief argument. Whereas, short answers and multiple-choice exams test your ability to recall more specific information from a broader knowledge base, whilst practical exams often require the demonstration of a correct process or procedure. As such, your approach to the exam will have to vary accordingly.

It is important to find out as much detail as you can about the exam before planning your revision. Information such as the date, time and location are obviously critical, but so too are things like the duration and the type of exam, the organisation of the paper, the marks allocated and their weighting, and if any supporting material is required or allowed, e.g. calculators, tables, textbooks or other equipment, you may need to take with you.

There are a number of sources that can give you some idea of the likely content of the exam, such as module handbooks, their aims, objectives and learning outcomes, and/or assessment criteria. Past exam papers, which can be found on the library pages of the student portal are also a good source, and if you are at all unsure ask your tutor or programme team. If your programme has PALS (Peer Assisted Learning Scheme) then bring this up in one of your PALS sessions.

Whilst some people do perform better than others in exam situations, the key to exam success for all is good planning and preparation, and using effective revision strategies. Before discussing each of these areas it is worth dismissing a few unhelpful myths about exams and their revision. The table, on the right, outlines just a few myths about how students feel about exams and the reality.

- **Revision and exam planning**
- **Developing knowledge and understanding**
- **Knowledge reinforcement and retrieval**
- **How to minimise stress**

Much of this content has been drawn from Yana Weinstein and Megan Sumeracki's book, *Understanding How We Learn: a visual guide* (2018), which draws extensively from the field of cognitive psychology, and exploring the impact this has on learning. You can visit their website, *The Learning Scientists* (**www.learningscientists.org**) for lots more useful information on learning.

MYTHS
THE REALITY
WHAT YOU CAN DO

MYTH	REALITY	WHAT YOU CAN DO
I have a poor memory	Most humans have immense memory capabilities.	You might not have found the way your memory works best, so try new revision approaches.
	Few exams are just about memory recall.	Think about developing your ideas and understanding of topics instead of just recalling facts.
I cannot remember it all	You are not expected to know everything.	Identify and focus on the critical areas of your programme that are emphasised and focussed on by your tutors, how these link together, and enhancing what you do know and feel comfortable with.
I cannot afford to fail	Keep it in perspective, this is not a life or death situation.	Exams are often just a part of the assessment process, you will have other opportunities to show your understanding, and even if you do fail, most exams have the option of a re-sit, that are capped at 40% but still mean you can pass.
	Do not frame yourself as a 'victim' in this situation.	You chose to study this course and you can be positive in how you approach it, as long as you try your hardest no one will think badly of you – and remember everyone actually wants you to be successful.
I cannot write quickly enough to answer all of the questions	Understanding is demonstrated through quality not quantity.	Take time to plan your answers, even short ones, to make sure you do actually answer the question, rather than waffling on until you think you have covered it.

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REVISION AND EXAM PLANNING

All the learning you do on your course prepares you for your exams, so exam preparation really starts when your course starts. One of the most effective ways of building your working memory and information retention is to get into the habit of regular spaced practice, where topics are revisited periodically throughout the semester. This revisiting does not have to be too onerous or long-winded, in fact, little and often can be more effective both for learning and retrieval. So, **consider setting aside a little time every week, to write, draw or map summaries of the new material you have learned that week**.

The duration of these sessions is all to do with concentration and attention to task. The longer the revision session the more likely you are to lose concentration, which then brings into question how effective that revision is being. A few successive, shorter revision sessions of say 30 to 45 minutes, with a five-minute break in between, can be much more productive than sitting for two hours straight. Consider adopting a model such as the one below.

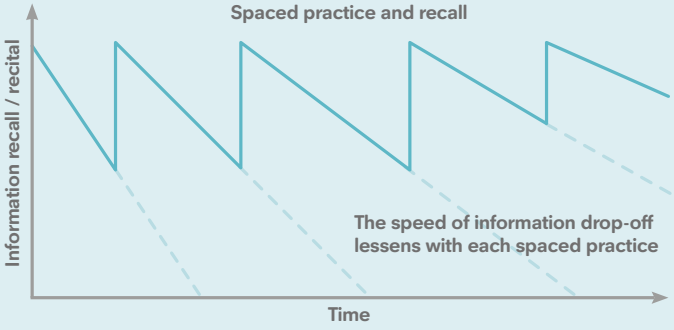
Short interval study plan

Obviously a critical part of this model is keeping the short breaks to five minutes, which means just getting up, walking around a bit (this boosts oxygen to your brain), getting some fresh air, making a drink and getting back to it – not checking in with emails, social media or other distractions!

Managing distractions is a huge part of keeping your concentration and attention levels high. Research conducted in 2002 indicated then that we were being interrupted approximately seven or eight times an hour in our daily lives, with Ofcom now saying in 2018 that on average we check smartphones every 12 minutes. If you let them, these distractions will have a seriously detrminetal affect on your concentration, **so turn off your distractions** when you are studying, whether that be email, social media, television, music or others. You may think that you can multi-task in these situations, but the brain is actually only really able to fully focus on one thing at a time.

Work carried out as long ago as the late 1800s has highlighted the benefit of spaced practice, which is also supported by the field of cognitive psychology. The graph below shows what happens to our ability to retain and recall information over time. If we do nothing with it then it drops off very quickly, but regular spaced practice reduces the information drop-off, and helps to get information into our long-term memory.

Spaced practice and information retention taken from Weinstein and Sumeracki (2019)



Spaced practice example

REVIEW	TIME AFTER LEARNING	DURATION	TASK	RETENTION
1	24 – 48 hours	5 minutes	Review notes	
2	1 week	10 minutes	Quick retrieval	
3	3 – 4 weeks	25 minutes	SQ3R (see Knowledge reinforcemnt and retrieval)	
4	7 – 8 weeks	20 minutes	Detailed retrieval	

The timing and duration of spaced practice will depend upon how long it is until any exam is being sat, a basic schedule, from hours to days to weeks, can be seen in the table.

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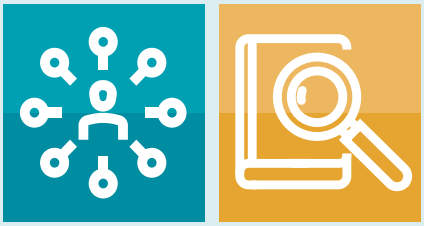
DEVELOPING KNOWLEDGE AND UNDERSTANDING

Processes for developing knowledge and understanding are highly individual, which is why it is worth trying out a number of different approaches to find out what works best for you. Here are some ideas that are known to be quite effective for most people.

- Firstly, utilise 'active' revision and recall activities, which means doing something with the information, rather than just reading it and making notes from other texts. Reading, listening and copying notes are very passive activities, and memory recall can be as low as 20% from these, which means you have to do a lot of it for it to have an effect. Presenting information to a group, explaining something to somebody or debating it, are far more active processes, and memory recall can be much higher from these. **So consider setting up a 'peer revision group' where you present information to each other on a regular basis.** You will not only remember the bits you presented on, but also what your peers spoke about.

- What can also help with recall and information retrieval is something called dual coding. This is where text is supplemented with images, shapes, colours or even sounds. The more multi-modal the information is that is being considered, means that more pathways are created in the brain to that information, making it easier to find and recall. Just through the process of handwriting notes or index cards, rather than typing them, can increase the number of pathways to that information and improve the ability to recall it. Also think about colour coding certain topics consistently throughout your curriculum, this will enable you to identify groups, and subsequently how things are related.
- Being able to highlight how things are related, interact or impact on one another means that you will then be able to elaborate your answers, thereby showing a more holistic understanding rather than isolated bits of information. Elaboration also comes through addressing 'why' and 'how' questions both in your revision and in your exam responses. When you ask and answer these sorts of questions ('so what' is another good one) in your writing, it really starts to show a deeper understanding of the topic, and generally means that your answers will be more analytical, rather than just descriptive. **See our study guide on *Critical Thinking* at www.plymouth.ac.uk/learn for more on this.**



- Another good strategy to help elaborate your knowledge and understanding is by identifying concrete examples, specific real-world applications of the theories, models, processes or information you are studying. Although it is important to remember the processes behind the examples and not just the examples themselves. Again, being able to draw on concrete examples will not only help in being able to recall information, but it will also enable you to give more detailed answers in the exam.

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KNOWLEDGE REINFORCEMENT AND RETRIEVAL

As mentioned above, there is nothing quite like regular retrieval practice for improving your recall of information, not just reading about it, but actually committing your knowledge and understanding to paper. It may not feel as if it is being as productive as 'comfort-reading' and making notes, but it does consistently out perform these approaches when it comes to actual exams. What this does require is that the content of your subject is broken up into manageable chunks, enabling you to cover each chunk in relatively short time slots, such as 30 to 45 minutes.

One retrieval approach that is widely known to be successful is **SQ3R** (see below).

Other Approaches

Once again, using multi-modal approaches in your knowledge reinforcement and retrieval, will improve the links you make to that information, and therefore make it easier, and more likely, to be recalled. Increasing numbers of students are recording themselves talking about the topics they are focussing on, which gives them another source of information to learn from; and then listening back to the recordings whilst they are sat on the train or driving into university. Mind-maps are also very popular, as these enable you to highlight how things connect to one another, which is sometimes difficult with just text, and you can get a lot of information on just one page. **You do not have to be fixed in the modes you use, get creative and try different ones.**

Another excellent activity to develop information retention and retrieval is to actually practice your exams. Ideally in the week leading up to the exam this is where you should be focussing your attention, rather than trying to cram in more information. Practice writing a series of short responses, or essays against the clock under exam conditions. This will not only check how much you are able to recall and write about constructively, but also get you better prepared for the exam. This is so important if you do have to write two or three essays in one exam, as this is not only mentally draining but physically draining as well, and if you are not prepared for it you are less likely to perform well.

S Survey	First, survey the texts you are using, to check they are the most relevant and useful, be they textbooks, lecture notes, revision notes, or journal articles, just make sure they are the best source of information.
Q Question	There are two questions that need to be addressed here, and the answers must be written down. The first is, 'what do you already know about this specific topic?' – get a blank piece of paper and write down, preferably in coherent sentences, everything you can recall about that specific topic. Even if this takes 30 minutes or more, this is incredibly effective in testing your knowledge retrieval. The next question is, 'what else do I need to know?' – you now try to identify where your gaps are, again write this down.
R Read	Now you read the text, checking what you got correct and were able to recall, what you might have got wrong, and where the gaps are. Rather than just reading the text in the first place, you have actually tested yourself on what you could and could not recall; what you can recall you can almost forget now because it is in your long-term memory, your focus now needs to be on what you could not recall or got wrong.
R Recall	Now you have read the text, what else can you add to your previous notes, so building on what you knew.
R Review	Finally, look over all the texts to check that you have now got a complete picture of that topic.

Ideally the whole SQ3R process should take between 30 to 60 minutes. It is a very active process, which can also be multi-modal if you include pictures and diagrams in your descriptions.

Memorising facts, figures and specific information

Sometimes you do have to be able to recall specific pieces of information, such as formulae and equations, or dates, here are some tips for doing that.

Spend time writing out the full workings of numerical problems to ensure that you understand how you arrive at the answer. Consider using colour coding for formulae, and visual images to help recall.

If you need to recall detail in diagrams and graphs, test yourself on small sections of the figure.

Use graphics to create visual memories: diagrams, charts, tables, images, symbols, colour coding and mind-maps can all be used to plot topics in forms that aid understanding and create triggers for recall.

Build up your memory little by little: link each bit of learning onto what you have already learnt and understood.

Be creative in your links by using mnemonics and acronyms – and even tunes!

Remember that the real key to remembering is understanding in the first place, so question the material continually and work out the connections between the issues.

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HOW TO MINIMISE STRESS

Create a positive study environment:

Ensure your room lighting and temperature, chair and desk match your needs, making you feel comfortable but not too relaxed. Lying on a bed or a sofa often leads to the mind and focus wandering.

Have a clock in the room so that you can keep to targets and work smart, not endlessly.

Use motivating 'post–its' and messages to yourself.

Look after yourself, and keep everything in moderation – a stressed mind does not learn well, so:

Eat a balanced and healthy diet.

Take regular, but timed breaks.

Exercise, this releases frustration, helps relaxation, and lowers blood pressure.

Sleep well and take time to wind down after studying and before bed.

Talk to people who care about you – including staff at the university – if there's anything that's bothering you.

Make study active and rewarding, follow some of the suggestions earlier in this Study Guide, and reward yourself for work done.

Think positively – if you believe that thought shapes energy and energy shapes action, then replace negative thoughts with positive ones and always remember that you have overcome great challenges in the past and you can do it again!

WHAT TO DO IN THE EXAM

The first few minutes of an exam are very valuable, so:
Check that you have the correct paper for your course, and complete the relevant details on the front of the paper: name, student number, module code etc.
Read the instructions twice and check all the pages.
Establish how many sections or questions you need to answer.
Decide how to tackle the paper, take a few moments to plan this, if you have multiple essays to write it might be best to plan all of these before writing, whist your mind is at its sharpest.
If it helps, answer any 'easier' questions first; you may then find that the more difficult questions become clearer as you get into your stride.
Analyse the questions just as carefully as you would for an essay, make sure you answer them!

During the exam
Answer the questions set, regurgitating information that doesn't answer the question is a common mistake that will earn you few marks.
Show that you understand the meaning and principles behind any facts rather than you have just learnt the facts by rote.
Write neatly, leave plenty of space, use clear and simple language.
Where possible use and acknowledge the work of others.
If you can't remember certain bits of information try free-writing about it, or making a mind-map of it on some rough paper, this might trigger your memory recall.
If you start to get stressed try to take a moment to compose yourself, breathe in through your nose for a count of 5, then out through your mouth for a count of 4, close your eyes and just focus on something else for a minute, imagine what you are going to do after the exam!
If time is running out, write an outline of your answer(s), or even bullet points, showing any specific points you wanted to make.
Cross out but do not obliterate rough work and planning, this can gain additional marks.
Stay until the end – and use all of the time even if it is just reading through your answers checking for coherency and spelling.

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