Don’t Panic: The Hitch-hiker's Guide to Alternative Assessment

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INTRODUCTION

This guide is designed to help people move onto on-line teaching and assessment, in light of the ongoing COVID-19 virus situation. Particularly worth exploring are some assessment approaches that can be used as alternatives to examinations. Many thanks to Lisa Padden, UCD, and Trevor Boland, AHEAD for their advice. This is a companion document for the *Hitch-hiker's Guide to Online Teaching*: http://www.damiantgordon.com/Guide-2.pdf.

Achieving Learning Outcome in New Ways

One of the biggest challenges of moving online is that certain activities that are done a particular way in the classroom will have to be done in a very different way in the online environment. For example, in one of the modules I teach, one of the learning outcomes is to help the students understand how different environments impact on a person's ability to solve problems. We normally do this by going to different rooms and solve problems; we try rooms with fixed seating, and rooms with flexible seating; we go to the canteen and solve problems there, and go out into the courtyard, and solve problems there. In an online setting, we can't get the students to do this, so instead we might ask them to research and write a short essay 400-600 words on "The Impact of Environment on Problem Solving". It achieves the same learning outcome in a different way.

Crucially all the learning outcomes of a given module need to be addressed, but given the situation we are in, we need to be more focused on the essential essence of what we are teaching, so we need to consider what is the exact core concept we are trying to get across, and if we can teach that; by having an online class, or by making a video, or by creating an assignment, and then we provide examples that help illustrate that key concept, then the students can review those in their own time, and we may be taking a lot of stress off our students by taking this approach.

What if the students has limited or no Internet access?

It is important to reflect on your assignments, and consider the following:

- Do the students need to have internet access to do research on this assignment?
- Do the students need to have internet access to use online tools to do this assignment?
- Do the students need to have internet access to submit this assignment?

Here are four levels of support to consider:

1. Think about packaging up all the necessary content as a .ZIP (archive) file, so that it can downloaded in one sitting.
2. Maybe load the content onto a USB stick and post/deliver.
3. Print out the content and post/deliver.
4. For the techie type of person, set up a torrent server

Workload Equivalences

This section is based on the UCD Teaching & Learning document "*Assessment Workload and Equivalences*"[1], but with some changes, and a few additions from London South Bank University[2] and Fielding (2008)[3].

Assessment Type	Equivalence
Examination	1 hour
Case Studies	750 word case study
Essays	1500 word essay
Interviews (Oral Examinations)	10 minute presentation
Multi-Choice Questions	30 minutes
Open Book Examination	1 hour
Paper	1250 word research paper
Portfolio (or Reflective Diaries)	2000 words
Podcasts	20 minute podcast
Poster (or Infographic)	1 poster or infographic
Programming (Code and Video)	Program consisting of at least 4 significant methods
Questionnaire	4 main sections, 10 questions per section
Video (of Presentation)	20 minute presentation

Accessibility Considerations

It is worth remembering that some students may have a Specific Learning Disability or a Special Need that might result in them having to use some software (like a screenreader) or an assistive technology to access your content and the virtual learning environment. So please make life as easy as possible for them by making your content as accessible as possible. Below are some accessibility tips for different types of teaching and assessment activities:

Accessible Presentations

- Presentations are usually a combination of text and images, so if you have learners with visual impairments the text will be readable with a screen reader, but the images may need a little more work to help those learners. If you right-click on an image (or a shape, or SmartArt, or a video), and select "Format", and choose "Properties" you will get an "ALT TEXT" tab which you may add a textual description of the visual element that the screen reader will read out.
- If the presentation software has built-in slide designs (for example, Title, Two Content, Blank, Comparison), try to use those as they will be well understood by the screen reader, whereas if you do your own formatting of slides it may cause confusion.
- If you are adding hyperlinks to a presentation make sure the linking text gives a clear indication of the destination, something like "Click Here" is insufficient detail compared to text that says "Link to the Irish National Disability Authority Website".
- Make sure the text and images are coloured in such a way that there is enough contrast with the background colour, use an online contrast checker if you are not sure that it's sufficient, e.g. https://webaim.org/resources/contrastchecker/

[1] http://www.ucd.ie/teaching/t4media/assessment_workload_equivalences.pdf
[2] http://www1.lsbu.ac.uk/lteu/documents/Assessment%20Load.pdf
[3] Fielding, A., 2008. Student assessment workloads: a review. *Learning and Teaching in Action*, 7(3), pp.7-15.

Accessible Podcasts

- Create a transcript of the podcast. There are a number of software tools online that will convert audio files into text. If you include the transcript on the same webpage as your podcast, it will make it easier for search engines to find it.
- Use the transcript to create *Show Notes* for the podcast, which can include:
    - Title of Podcast
    - Episode Number
    - File Size
    - 3-5 Key Takeaways from the Podcast
    - The Transcript
    - Best moments from the Podcast
    - External links to useful information related to topic of podcas

Accessible Videos

- Create a transcript of the video. There are a number of software tools online that will convert videos into text. If you include the transcript on the same webpage as your video, it will make it easier for search engines to find it.
- Use the transcript to create *Closed Captions* for the video, which are subtitles that also include text descriptions of non-speech elements such as background music.
- You can also consider adding an additional soundtrack of *video descriptions* which are audio descriptions of the video's key visual elements. These descriptions are usually inserted into natural pauses in the dialogue.
- If one of the settings you have control over is auto-play, it is better not to set the video playing as soon as the learners visit it, let them decide when they want to start playing the video.
- Under no circumstances include flashing or strobing content in your video, it can trigger epilepsy in some learners. If you are not sure if your video can cause problem, download the Photosensitive Epilepsy Analysis Tool from the Trace Center and you can test it using the following link: http://trace.umd.edu/peat

Accessible Documents

- If the document is a combination of text and images, then if you have learners with visual impairments the text will be readable with a screen reader, but the images may need a little more work to help those learners. If you right-click on an image (or a shape, or SmartArt, or a video), and select "Format", and choose "Properties" you will get an "ALT TEXT" tab which you may add a textual description of the visual element that the screen reader will read out.
- If you are adding hyperlinks to a documentation make sure the linking text gives a clear indication of the destination, something like "Click Here" is insufficient detail compared to text that says "Link to the Irish National Disability Authority Website".
- Make sure the text and images are coloured in such a way that there is enough contrast with the background colour, use an online contrast checker if you are not sure that it's sufficient, e.g. https://webaim.org/resources/contrastchecker/
- Consider using Sans Serif fonts (for example, Arial, Comic Sans, Verdana or Sassoon), and try to use as large a font size as possible, at least 18 point size.
- If you are using Microsoft Word, you can check the accessibility of your document by going into the following tabs:
    - File >> Info >> Inspect Document >> Check for Issues >> Check Accessibility

Accessible Games

- There are a range of audio games designed for visually impaired learners. These games can be played without any visual feedback, to learn more and see some examples, visit: http://www.audiogames.net
- There are a range of games designed to be played using a single switch for learners with severe motor impairments or cognitive impairments, to learn more and see some examples, visit: http://www.oneswitch.org.uk
- There are a range of games designed for learners with a learning disability, to learn more and see some examples, visit: http://game-accessibility.com
- There are a range of games universally designed for learners with different impairments, to learn more and see some examples, visit: http://www.ics.forth.gr/hci/ua-games/index.html

Accessible Searching

- Google has a video searching tool, which will search for videos over the entire web: https://www.google.com/advanced_video_search, and you can choose the option to search only for closed captioning, in the section: "**Subtitles > closed captioned only**".
- To search for videos with proper closed captioning on YouTube (not just the auto generated closed captioning, which can be poor), type in your search term and add in ", cc".

Accessible Webpages

- To check if a webpage is accessible, there are tools called web accessibility checkers you can use to test the page, for example, WebAIM's WAVE tool, https://wave.webaim.org/
- Webpages are usually a combination of text and images, so if you have learners with visual impairments the text will be readable with a screen reader, but the images may need a little more work to help those learners. If you right-click on an image and add "ALT TEXT" to give a textual description of the visual element that the screen reader will read out.
- If you are adding tables, include a textual description using the "DESC" tag, and if the table is a table of data, using the <th> tag to mark up Header Cells and the <td> tag for Data cells.
- If you are adding hyperlinks to a presentation make sure the linking text gives a clear indication of the destination, something like "Click Here" is insufficient detail compared to text that says "Link to the Irish National Disability Authority Website".
- Make sure the text and images are coloured in such a way that there is enough contrast with the background colour, use an online contrast checker if you are not sure that it's sufficient, e.g. https://webaim.org/resources/contrastchecker/

Accessible Brightspace VLE

It is possible in Brightspace to optimize your personal account settings for assistive technology[4]. The Brightspace minibar includes a personal menu with links to tools that store your personal information and settings. To open the personal menu, select the link containing your name. There are three links on the personal menu:

- Profile - Edit your shared personal information
- Notifications - Set how you receive notifications about activity in your courses
- Account Settings - Change display settings for Brightspace Learning Environment

[4] https://documentation.brightspace.com/EN/accessibility/-/learner/accessibility_and_navigation_intro.htm

Tips on Universally Designing your content

Universal Design is a philosophy of designing content that says you should design it so that it can be used to the greatest extent possible by all people regardless of their circumstances, and should meet peoples' needs. Simply put, universal design is good design.

Ten Tips for Beginners

1. Use a minimum of 14pt font size where possible in all documents, and justify the text to the left margin only.
2. Colour the document backgrounds with off-white/cream (for PowerPoints and other documents), and for handouts print out on cream paper if possible.
3. Try to break sentences into short readable units
4. Explain new terms when you first use them (consider creating a glossary)
5. Use bullet points, or better yet numbers, rather than long passages of prose
6. Include Pictures and Graphics to support text (e.g. flowcharts) and get students as an activity to create their own graphics/visuals for your topic
7. Make sure all handouts and notes are available well in advance of class
8. Try to break large documents (PowerPoints, Word docs, etc.) into multiple smaller documents, or at least create clear section breaks, and make the documents available to the students in a format that allows them to alter font size, type and colour (e.g. avoid providing PDF files)
9. Avoid Idioms, colloquialisms, and figurative language; also avoid examples that are too culturally specific, or gender biased
10. Consider using a font kind to people with dyslexia, like OpenDyslexic and Dyslexie, otherwise stick with sans serif fonts such as Arial, Comic Sans, Verdana, Tahoma or Sassoon

Ten Tips for Intermediates

1. Start each lesson stating a set of learning outcomes you want the students to achieve in this class (and link these outcomes to material they have already covered in previous lessons where possible).
2. Provide sample assessments (CA and exams) with solutions, and annotate these solutions with advice on answering questions and study tips. Give the assessments early in the semester, and provide the solutions over the following weeks.
3. If you are using videos and audio files, include a transcript. If it's a pre-existing video normally if you goggle a distinctive phrase from the video/audio, there's usually a transcript of it somewhere on the web.
4. Consider checking your materials using an accessibly tool where applicable.
5. Consider incorporating a peer reviewing element into your assessments, but make sure you teach students to be supportive and respectful of each other and their work.
6. Once a semester do an activity that gives the students some choice in the activity (it could be for example in terms of doing the activity individually or in groups; on-line or paper-based; in the classroom or as fieldwork; or some combination of these).
7. Instead of having a single large assessment, consider breaking it down into a few parts, and provide some quick feedback after each part to help the students understand what you are looking for in your assessments.
8. Give your students marks for participation in class (this is very easy to do on-line with discussion boards).
9. Create an anonymous comments box for students, you can do this on-line using SurveyMonkey
10. Give assessment instructions both orally and in written format, and remind students frequently of deadlines and delivery dates (Consider creating a class calendar also, with assessments, lab times, and other class activities).

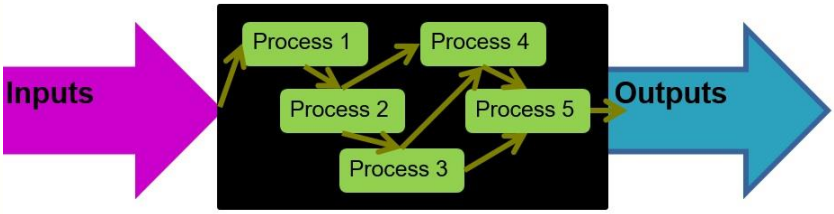
Ten Tips for Advanced

1. Communicate high expectations to all students in your class. If you have accommodated all students, everyone should have an equal chance at success. Provide them with examplars.
2. Upload your videos onto YouTube, and caption them, and learn more about the Web Accessibility Initiative (WAI).
3. When developing learning materials, in terms of the range of learners sensory preferences use the V-A-R-K Learning Styles model to create different types of learning materials and activities, e.g. PNG, Podcasts, PowerPoint, and Playdough
4. Explore each of the three common types of alignment in programme design: Vertical Alignment (linking modules between different years), Horizontal Alignment (linking modules in the same year), and Constructive Alignment (linking Learning Outcomes, Teaching, and Assessment, in a single module).
5. Pre-teach all symbols and unfamiliar vocabulary in an early class, and create a glossary booklet (with both text and visual descriptions) that you hand out at the start of the semester.
6. Consider the physical tasks that the students are required to do in class, find ways that you can provide alternatives in the requirements for speed, strength, timing, and range of these activities.
7. Create assessments so that the criteria to achieve a passing grade, a good grade, a very good grade, and an excellent grade are clearly articulated. Consider providing alternative criteria for each level also?
8. Involve students as much as possible in setting their own learning goals. Also work with them to create a personalized checklist of goals agreed to, and encourage them to tick off each goal as it is accomplished to let them see their progress.
9. When developing learning materials, in terms of the range of learners' cognitive preferences use Keirsey Temperament Sorter to create different types of learning materials and activities, e.g. create activities that include aspects of problem solving, planning, personal growth, and proficiency.
10. Create a series of supporting documents to increase students' independent learning skills and discipline-specific skills that they can access at their own rate.

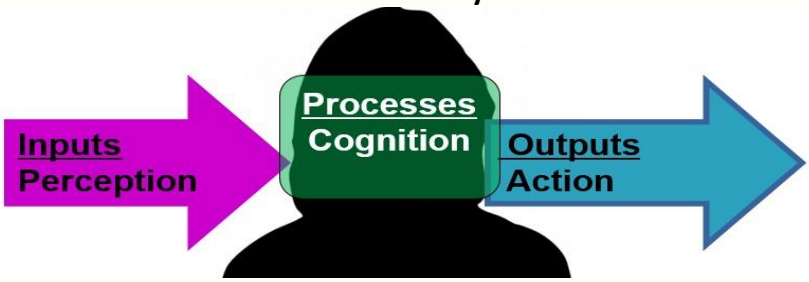
Universal Design for Learning: A Systems View

A systems view means that you view all phenomena by considering what are the inputs into the phenomena, what are the outputs of the phenomena, and how are the inputs converted into the outputs (usually as a results of a number of intermediate processes). We can treat a student in the same way; how do they take in information? Through their senses; How do they process information? Using cognition; and how do they demonstrate their learning? Through actions and activities.

General system:



The human as a system:



Universal Design for Learning recommends we provide multiple means of input, processing, and output to ensure a range of students can be easily engaged in the learning process, and that there is equity between students.

INPUTS **REPRESENTATION**	**PROCESSES** **ENGAGEMENT**	**OUTPUTS** **ACTION/EXPRESSION**
This is the WHAT of learning, it focuses on Perception, Language and Symbols, and Comprehension. Things to consider include alternatives in the display of information, including auditory and visual displays, and to support comprehension.	This is the HOW of learning, it focuses on Interest, Effort and Persistence, and Self-Regulation. Things to consider include creating authentic, relevant and valuable experiences. To increase motivation and to promote self-belief.	This is the WHY of learning, it focuses on Actions, Expression and Communication, and Executive Function. Things to consider include allowing the students multiple tools for different types of communication, and to guide reflection and monitoring.

ALTERNATIVE ASSESSMENTS

Case Studies

Description

A case study can be used to explore specific real-world phenomena that focus on interpreting events, and exploring the societal context in which the case occurs. The qualitative nature of these cases can be seen as novel when introduced in computer science courses which are typically more quantitative in nature. They can be used to both explore specific problems and challenges of introducing new technologies into organisations, as well as exploring general topics like digital ethics.

What to do?

Ask the students to:

- ***Create a case study***
- ***Search for 2-3 relevant case studies and justify why they are useful***
- ***Read a case study and create 5-7 questions to aid reflection on the case study***
- ***Read a case study and review it using the checksheet below***

Free Advice is Seldom Cheap

Try to:

- Break the case study down into small paragraphs, or better yet, bullet point the text
- Emphasise the key nouns and verbs of the case using italics or underscores
- Tell the students to take their time in reading and re-reading the case study, and to make notes of key points as they are reading the case
- Set up a discussion board so that the students explore the case study collectively, and perhaps create separate threads for different aspects of the case study
- Create a template solutions document for the students, with Headings, and some sentence starters, e.g.

Before the Intervention	*The case begins with …* *The organisation had been …* *Their key processes are …*
The Intervention	*The changes began with …* *The case states that …* *The key factors can be described as …*
After the Intervention	*The initial impact can be described …* *The key changes that occurred are …* *In exploring the outcomes …*

Case Study Checksheet

A task sheet for students to work through several times and internalise.

*Name of Case Study:*_____

Evaluation criteria	**Notes**
What is the case study about?	Introduction:
What is the organisation?	Introduction:
What are the technology issues?	Introduction:
Who are the principal actors?	Introduction:
What types of data were collected?	Data Collection:
From which sources did they come?	Data Collection:
How was the data recorded?	Data Collection:
What was the situation previously?	Main Features:
What interventions have been introduced?	Main Features:
What were the general outcomes of this intervention?	Main Features:
Are there any legal, social or ethical issues associated with this intervention?	Main Features:
Is there a chronological or other logic sequence for analysis?	Main Features:
What is the nature of the organisation?	Organisation:
What is its history?	Organisation:
How is it structured?	Organisation:
How has it changed as a result of intervention?	Organisation:
Who are the principal actors in detail?	People (Ecology):
What are their positions within the organisation?	People (Ecology):
What are their technical skills?	People (Ecology):
Does the target population for this intervention include more people?	People (Ecology):
What technology was present? What software? What hardware?	Technology:
What technical level of expertise exists within the organization?	Technology:
What new technology has been introduced for this intervention?	Technology:
How has the new technology effected the organisation?	Technology:
What are the possible consequences of this technology - intended and unintended?	Technology:
How successful has the intervention been?	Evaluation:
What new outcomes have been identified?	Evaluation:
What went well in this intervention?	Evaluation:
What did not go well in the intervention?	Evaluation:
What alternative approaches could have been taken?	Evaluation:

Essays

Description

A non-fiction essay is a piece of writing focusing on a specific topic based on the review of scholarly sources, synthesised and reviewed from the student's perspective. It is often written in a persuasive voice to argue from a particular point-of-view. It is usually composed of three parts:

- *Introduction*: Present the main topics and arguments to be covered
- *Main Body*: Detail the arguments, present evidence, and articulate point-of-view
- *Conclusions*: Summarize the content of the essay

What to do?

Ask the students to:

- ***Write an essay***
- ***Review another student's essay***
- ***Search for essays online***

Free Advice is Seldom Cheap

Try to:

- Create a template solutions document for the students, with Headings, including "Introduction", "Main Body", and "Conclusions"
- Consider creating some sentences starters for each section
- For a non-fiction essay, encourage the students to undertake their own readings and research on the main topic of the essay
- Encourage them to create a folder to collect resources from their readings, including quotations, diagrams and key arguments
- Explain to the students that they will have to draft and redraft their essay as part of this process, and it will help them in developing a formal, academic "voice"
- Advise the students to create an essay outline, which lists the main points and the key arguments that will be part of the essay. Take those key points and categorise them together by theme to give the essay for structure
- Help the students develop their critical thinking skills, focusing on analysis (breaking things down, and discussing them), synthesis (bringing things together, and discussing them), compare (discuss the similarities), contrast (discuss the differences), justify (provide evidence for), and summarise (identify the key points)
- Tell them it's important to critique the readings they use in the essay, and also to critique their own arguments
- The last thing the students need to do is redraft their introduction, starting with an interesting quote or fact, outline the sources and strands of evidence, and finish with the conclusion you are going to be reaching

Interviews (Oral Examinations)

Description

An interview is typically a two-way structured conversation where one participant asks questions and the other answers them. Interviews can be highly structured, semi-structured, or unstructured. Structured interviews usually have fixed questions, and are given to the interviewee before the interview. Semi-structured interviews usually have some fixed questions, and some that crop up during the interview, and the fixed ones are given to the interviewee before the interview. Unstructured interviews do not have any fixed questions, and are not given to the interviewee before the interview.

What to do?

Ask the students to:

- ***Create a series of interview questions for a specific job or topic***
- ***Search for 2-3 relevant interview transcripts and justify why they are useful***
- ***Create a video of a simulated interview***

Free Advice is Seldom Cheap

Try to:

- Develop a set of clear instructions as to how the exam will be conducted that you will give in written format to the students before the exam, and may wish to repeat the key points in oral form at the start of the exam, e.g. time limit per answer
- Create a clear marking criteria including things such as content of answers, quality of answers, structure of arguments, flexibility, level of understanding demonstrated
- Create oral exam questions that are clear, compact and unambiguous, and develop alternative versions of each question if the students ask for clarification
- Create some warm-up (easy) questions for the start of the exam to help build the students' confidence
- Help the students in their preparation for the oral exam by getting them to work out a timetable of study in preparation for this exam, and provide them with some sample questions that they should practice answering
- Get them to practice how they are going to introduce themselves, how they should dress, and how they should behave during the exam
- Get them to practice listening, which includes listening for any instructions that are given and listen to questions, and taking time to formulate answers
- Encourage students to make videos of their practice process, and review the videos, paying attention to how they outline their answers, as well as their body language.

Interview Checksheet

A task sheet for students to work through several times and hopefully then internalise.

*Interview Title*_____

Evaluation criteria	Notes
What is the main issue being discussed?	Content:
Does the interview comprehensively cover the main aspects of the issue?	Content:
How original is the content presented?	Content:
How complex is the content presented?	Content:
Does the interview include references to academic research or quality data sources?	Content:
How well is the interview presented?	Format:
How clear is the interview in terms of delivery?	Format:
Are the interview participants confident in their delivery?	Format:
Are the main points of the interview presented clearly?	Format:
Is the use of terminology, and language of a high standard?	Format:
Is there a clear and logical structure to the interview?	Structure:
Is there a smooth transition between topics?	Structure:
Is there a logical internal structure within each topic?	Structure:
Is there good quality data being used to structure the content?	Structure:
Is there a good clear introduction at the start of the interview?	Structure:
Is there a good clear summary at the end of the interview?	Structure:

Multi-Choice Questions

Description

A Multi-choice question is made up of two parts; (1) the question (or stem), and (2) a series of alternative or possible answers, where one of the answers is the correct answer, and the others serve as distractors. If the answerer selects the correct answer they get some marks, and if they select another answer they get no marks (or sometimes negative marking).

What to do?

Ask the students to:

- ***Create a series multi-choice questions to cover a particular topic***
- ***Answer a series of multi-choice questions and mark them formatively***
- ***Answer a series of multi-choice questions and mark them summatively***
- ***Rate other students multi-choice questions***

Free Advice is Seldom Cheap

Try to:

- Make the alternative answers significantly different from each other, particularly for students with dyslexia
- Remember that If you provide 4 alternative answers, the students have a 25% chance of guessing the right answer, if you provide 5 alternative answers, the students have a 20% chance of guessing the right one, if you provide 6 alternative answers, the students have a 16.6% chance of guessing the right one
- Develop a big bank of questions that students can randomly get assigned
- Vary the location of the correct answer, if there are four possible answers lecturers tend to initially put the right answer as the third option
- Create a few simple questions for the start of the quiz and move to more complex questions that emphasise more critical thinking and high-level thinking as the quiz progresses
- Avoid giving clues in either the question or in the correct answer, once the questions become more complex.
- Encourage the students to practice taking multi-choice questions, advising them to read each question slowly and carefully, and decide on a potential answer before looking at the alternatives.
- Also remind them to read every answer carefully, and eliminate the alternative answers that they know are definitely wrong, and select the best answer.
- Let them know that when in doubt select the answer the contains the most information

Open Book Examination

Description

In an Open Book Examination the students are allowed to have access to books, papers and on-line content while doing an examination. Therefore the emphasis moves away from memorization of facts and formula, and focuses more on solving problems and demonstrating critical thinking and judgement.

What to do?

Ask the students to:

- ***Undertake an open book exams, create an assignment box that is open for a week, and it times the students for 2 hours***
- ***Get students to design an open book exam question***

Free Advice is Seldom Cheap

Try to:

- Avoid creating long questions in a single paragraph, divide into paragraphs, and if possible divide into sub-questions, for students with dyslexia
- Review the learning outcomes of the module, and ensure that all the necessary ones are addressed in the exam
- Start the exam with some basic (fact-based) questions to help build up the confidence of the students, moving to more complex questions
- Remember that in an open book exam the students will need time to look at the references materials they are using, as well as time to write the answers
- Given the current circumstances, be flexible in your estimation of how long it will take to complete each element of the assessment, particularly if students are being required to submit content online, delays will be inevitable
- Highlight to the students that just because it is an open book exam that it doesn't mean they don't have to memorize content, in fact on the contrary, it is recommended that the students memorize as much content as possible so that they won't be constantly having to search in their reference materials
- Encourage students to read all of the reference materials before the exam and get them to bookmark and add post-it notes to key content.
- Also encourage the students to write notes of potential answers to key themes that may appear on the exam, if they can fit everything on a single sheet of paper, then they will be able to reference it quickly in the exam

Paper

Description

A scientific paper is a document that usually describes an experiment from hypothesis and methodology, to results and conclusions. The typical structure of a paper is as follows:

- Title: This is what the paper is about
- Abstract: This is a summary of paper, including the main reason for the experiment, the primary results, and the main conclusions
- Introduction: This is an explanation as to why the experiment was undertaken, as well as some background literature
- Methodology: This is how the experiment was undertaken
- Results: This is the key findings of the experiment
- Discussion: This explains why these results could be significant

What to do?

Ask the students to:

- ***Write a paper***
- ***Search for 2-3 relevant papers and justify why they are useful***
- ***Read a paper and discuss the paper's hypothesis, methodology, and results, and compare all three.***
- ***Read a paper and review it using the checksheet below***

Free Advice is Seldom Cheap

Try to:

- Provide the students with a template, e.g. The ACM Master Article Template
- Give them very clear guidance as to what they have to do to produce the content of the paper, e.g. Do they have to perform an experiment? Do they have to review research? Do have to create new visualisations of data?
- Consider creating some sentences starters for each section
- Encourage the students to undertake their own readings and research
- Encourage them to create a folder to collect resources from their readings, including quotations, diagrams and key arguments
- Explain to the students that they will have to draft and redraft their paper as part of this process, and it will help them in developing a formal, academic "voice"
- Help the students develop their critical thinking skills, focusing on analysis (breaking things down, and discussing them), synthesis (bringing things together, and discussing them), compare (discuss the similarities), contrast (discuss the differences), justify (provide evidence for), and summarise (identify the key points)
- Tell them it's important to critique the readings they use in the paper, and also to critique their own arguments
- The last thing the students need to do is redraft their abstract, once the paper is completed

Scientific Paper Checksheet

A task sheet for students to work through several times and hopefully then internalise.

*Name of article*_____

Evaluation criteria	**Notes**
What type of article is it?	Content:
What is the main issue/problem being discussed?	Content:
Skim read – what could your dissertation gain by including this article?	Content:
What is the article's contribution to knowledge?	Content:
How can this information be integrated into your review?	Content:
Compare and contrast to similar articles – for or against/ or an extension of the literature?	Content:
Are there recommendations for further research?	Content:
Where is the article placed in your field? Famous author?	Evaluation:
Is the article well written, interesting and easy to read?	Evaluation:
Is there a clear research question – can it be tested?	Evaluation of Hypothesis:
What methods are used to carry out research	Evaluation of the Research Design:
Is the design appropriate for testing the stated hypothesis?	Evaluation of the Research Design:
What are the limitations of the design/research methods?	Evaluation of the Research Design:
Are there aspects of the design that could be applied to your work?	Evaluation of the Research Design:
Are the results well displayed and clear?	Evaluation of Data Presentation:
Are the results in keeping with the design?	Evaluation of the Research Results:
Are the implications of the study clear?	Evaluation of the Research Results:
Have the results been appropriately discussed?	Evaluation of further calls for research:

Portfolio (or Reflective Diaries)

Description

A student portfolio is a compilation of academic work which describes the student's journey on exploring a specific topic. The portfolio allows the student to reflect on their goals and progress, and allows the lecturer to see how that journey is going. Online portfolios (also called *digital portfolios* or *e-portfolios*) are often blogs and document the ongoing student reflections.

What to do?

Ask the students to:

- ***Keep a portfolio***
- ***Search for 2-3 portfolios and justify why they are useful***

Free Advice is Seldom Cheap

Try to:

- Provide some templates, and a few sample portfolios
- Give clear instructions as to what types of content can be put in the portfolio, and show how they link to the module learning outcomes
- Provide clear guidance in terms of the complexity of content to ensure it is sufficiently complex to enable good reflections
- Provide clear descriptions as to the different kinds of reflections that are possible by students, including reflecting on what they have done, what they should have done, and what they are going to do in the future
- Provide periodic feedback on the content of the portfolio and request that the students reflect on that feedback
- Decide on the type of evaluation you will use on the portfolio; will you measure the individual components in the portfolio, or mark it holistically, or both?
- Encourage the students to populate the portfolio with a range reflections about the content that they have collected, as well as the content itself
- Encourage the students to organise the portfolio on the basis of the themes, concepts or learning outcomes
- Emphasis that portfolio is a communication tool that describes the learning journey that a student has undertaken
- Arrange that another lecturer second read some of the completed portfolios to verify your marking

Portfolio Checksheet

A task sheet for students to work through several times and hopefully then internalise.

*Podcast Title*_____

Evaluation criteria	Notes
What is the main topic being discussed?	Content:
Does the portfolio demonstrate creativity?	Content:
Does the portfolio demonstrate critical thinking and self-reflection?	Content:
Does the portfolio include references to academic research or quality data sources?	Content:
Is the content accurate?	Content:
Does the portfolio include effective multimedia?	Content:
Is the portfolio clearly laid-out?	Format:
Is the portfolio aesthetically appealing?	Format:
Is the use of terminology, and language of a high standard?	Format:
Is the portfolio well written, interesting and easy to read?	Format:
Is the navigation user-friendly and intuitive?	Format:
Is the use of whitespace suitable?	Format:
Is there a clear and logical structure to the portfolio?	Structure:
Is there good quality data being used to structure the content?	Structure:
Is there a good clear introduction at the start of the portfolio?	Structure:
Is there a good clear summary at the end of the portfolio?	Structure:

Podcasts

Description

A podcast is a series of audio recordings that a user can download and listen at their own pace. The podcast usually features one or more hosts talking about a specific topic. Many podcasts include information such as an associated website with links and show notes, transcripts, additional resources, and additional commentary.

What to do?

Ask the students to:

- ***Create a podcast about a specific topic***
- ***Search for 2-3 relevant podcasts and justify why they are useful***
- ***Search for 2-3 relevant podcasts and critically review them***
- ***Search for 2-3 relevant podcasts and create 5-7 questions to aid reflection on it***

Free Advice is Seldom Cheap

Try to:

- Create a resource with a list of some potential recording software that the students can use, as well as websites that could provide technical support for any issues
- Specific a minimum and maximum allowable duration of the podcasts
- Consider the type of podcast that you wish the students to create, e.g. review of a specific topic, an interview or discussion, documenting an activity
- Encourage students to create content that compliments the audio format of the podcast, and consider incorporating audio clips from other recordings
- Encourage students to write a script before recording the content, make sure the script has a beginning, middle, and end
- Decide on the type of evaluation you will use; will you measure the quality of the content, or mark the quality of the recording, or both?
- Consider where the podcasts will be hosted
- Check the organisational policies about publishing content like this
- Encourage the students to decide on incidental music, audio effects, or audio clips, and research existing resources

Podcast Checksheet

A task sheet for students to work through several times and hopefully then internalise.

*Podcast Title*_____

Evaluation criteria	Notes
What is the main topic being discussed?	Content:
Does the podcast comprehensively cover the main aspects of the topic?	Content:
How original is the content presented?	Content:
How complex is the content presented?	Content:
Does the podcast include references to academic research or quality data sources?	Content:
Is the podcast sufficiently entertaining?	Format:
Is it formal or informal in the manner it is delivered?	Format:
Is there a single presenter or multiple presenters?	Format:
How long is the podcast?	Format:
Was the audio well-produced?	Format:
Was the audio used to enhance the information communicated?	Format:
Is the use of terminology, and language of a high standard?	Format:
Is there a clear and logical structure to the podcast?	Structure:
Is there a smooth transition between sub-topics?	Structure:
Is there a logical internal structure within each sub-topic?	Structure:
Is there good quality data being used to structure the content?	Structure:
Is there a good clear introduction at the start of the podcast?	Structure:
Is there a good clear summary at the end of the podcast?	Structure:

Poster (or Infographic)

Description

Posters or infographics are graphic visual representations about a particular topic. When designed well they can enhance a student's understanding of a particular topic, particularly given human beings ability to use visual information to see patterns and trends. The three key metrics of the success of an infographic are - appeal, comprehension, and retention. There are a range of software tools to help create a range of specific visualizations,

What to do?

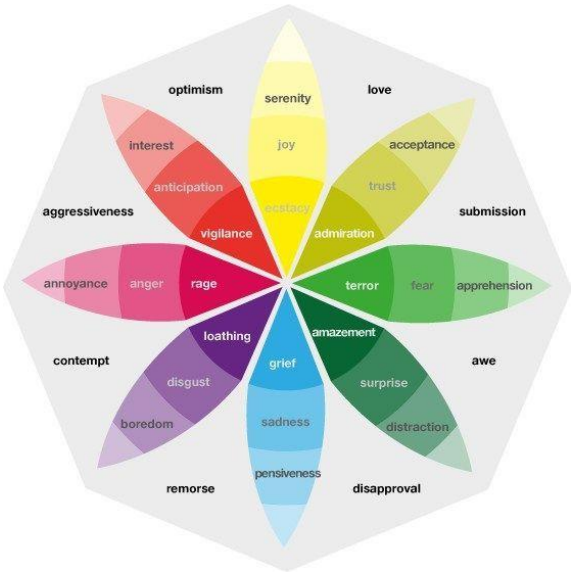
Ask the students to:

- ***Create a poster or infographic about a specific topic***
- ***Search for 2-3 relevant poster or infographic and justify why they are useful***

Free Advice is Seldom Cheap

Try to:

- Create a resource with a list of some potential visualisation software that the students can use, as well as websites that could provide hosting services
- Decide on the type of evaluation you will use; will you measure the quality of the content, or mark the quality of the visualisation, or both?
- Focus on having the students develop a visualisation that demonstrates a deep understanding of a particular topic
- Find an existing visualisation, and discuss it with your students, highlight the benefits and shortcoming of the visualisation
- Create an infographic yourself, to see what the process is like
- Direct the students to sites like http://www.informationisbeautiful.net/ for inspiration
- Highlight to students that researching the topic is a vital aspect of the process
- Get the students to peer review each others' designs
- Show the students an emotion colour wheel, e.g.



Poster Checksheet

A task sheet for students to work through several times and hopefully then internalise.

*Poster Title*_____

Evaluation criteria	Notes
What is the main topic being presented?	Content:
Does the poster comprehensively cover the main aspects of the topic?	Content:
How original is the content presented?	Content:
How complex is the content presented?	Content:
Does the poster include references to academic research or quality data sources?	Content:
Is the poster intuitive to understand?	Format:
Is the layout consistent throughout the entire poster?	Format:
Are the grammar, punctuation and spelling correct?	Format:
Are the diagrams on the poster clear and understandable?	Format:
Is the use of terminology, and language of a high standard?	Format:
Is visual layout being used to assist learning?	Layout:
Is the use of colour consistent and meaningful?	Layout:
Is the overall design of the poster meaningful?	Layout:
Is the poster aesthetically appealing?	Layout:
Is the information density overwhelming	Layout:
Is the use of whitespace suitable?	Layout:

Programming (Code and Video)

Description

Programming can include the gathering of requirements for a system, the design of code (using diagramming techniques), the development of that code, the testing of the code, and the evaluation of the code. If students are required to create a video, they can create a video of:

- The requirements of the system
- The design of the system
- The code in the system
- The system running
- The strengths and weaknesses of the system
- How the system compares to other similar systems.

What to do?

Ask the students to:

- ***Write a computer program about a specific topic***
- ***Create a video of the code, of the code running, of a discussion of why the code is good or bad, or a video or comparing this code to other similar systems, etc.***

Free Advice is Seldom Cheap

Try to:

- Definite a clear specification for the required program
- Consider creating alternative specifications for different students
- Review the learning outcomes of the module, and ensure that all the necessary ones are addressed in the specification of the program
- Consider creating some code stubs for the students
- Require that the students submit a written document that includes things such as:
    - An exact set of requirements based on the specification
    - Diagrams of the system (ERDs, Use Cases, Class Diagrams, ISDs, etc.)
    - A Comprehensive Test Plan
    - Description of the code
    - Evaluation approaches including benchmarking
- Explain the importance of clean coding, and good variable and method naming
- Focus on why code commenting is so important
- Require that the student give a submission for each stage of the development process (in line with the Software Methodology that the students have selected), as opposed to leaving everything until the last minute

Software Checksheet

A task sheet for students to work through several times and hopefully then internalise.

Evaluation criteria	**Notes**
What does the program do?	General Features:
What programming language is it written in?	General Features:
What platform is it written for?	General Features:
Is the program author identified?	Documentation:
Is the program title identified?	Documentation:
Is there a description of the main functionality of the program?	Documentation:
Is the date of creation of the program recorded?	Documentation:
Are the main functions of the program identified and explained?	Documentation:
Are the main variables of the program identified and explained?	Documentation:
Is the variable naming consistent?	Naming:
Does variable naming adhere to a standard? (.e.g. t=temp, i=index)	Naming:
Does each module have a clear variable declaration schema?	Naming:
Is the module naming consistent?	Naming:
Does module naming adhere to a standard?	Naming:
Is there a clear main module?	Main Module:
Does the main module identify the broad functionality of the program?	Main Module:
Are there global variables declared?	Main Module:
Are all of the library calls clearly identified?	Main Module:
Are the parameters to modules clearly explained?	Module Communication:
Is it clear which modules call a particular module?	Module Communication:
Is it clear which modules are being called by a particular module?	Module Communication:
Does each module have a commented header section?	Module Communication:
Are the inputs from command line arguments clearly explained?	Input/Output:
Are the inputs from the terminal clearly explained?	Input/Output:
Are other inputs (file, network etc) clearly explained?	Input/Output:
Are the outputs to the terminal clearly explained?	Input/Output:
Are other outputs (file, network etc) clearly explained?	Input/Output:
Are the comments clear and easy to understand?	Comments:
Is there a sufficient ratio of comments to code?	Comments:
Do the comments clarify the structure of the code?	Comments:
Are all updates to the code clearly commented and dated?	Comments:
Does the indentation consistently demark specific "blocks" of code?	Format:
Does code blocking adhere to a convention e.g. `int main () {` `}` versus `int main()` `{` `}`	Format:
Is there sufficient error/exception checking in all modules?	Exception Handling:

Questionnaire

Description

A questionnaire is a set of questions for the purpose of gathering information about a specific topic. They typically include two types of questions; open-ended questions and close-ended questions. Open-ended questions are ones where the students can give any response they want, whereas close-ended questions are ones where they can only respond from a pre-defined set of answers.

What to do?

Ask the students to:

- ***Create a questionnaire about a specific topic***
- ***Search for 2-3 relevant questionnaires and justify why they are useful***

Free Advice is Seldom Cheap

Try to:

- Identify a range of tools to build a questionnaire, and give students their choice
- Encourage the students to collect a range of questionnaire samples
- Encourage the students to define a specific focus for the questionnaire
- Require that the students show their drafting and redrafting process
- Require that the students use both open-ended and close-ended questions
- Require that the students avoid questions that are biased or too sensitive
- Decide on the type of evaluation you will use on the questionnaire
- Break the questionnaire into sections, and label each section
- Consider creating some sentences starters for each section
- Get the students to peer review each others' designs
- Advise the students to create a pre-amble outlining the goals of the questionnaire, and include that the questionnaire starts with some text to reassure the question takers, e.g. "*Please note if you fill in this questionnaire, your answers will be treated in highly confidential way. Neither I, my organisation nor any other third part will release your responses. I would like to personally thank you for your time in taking part in this survey*."

Video (of Presentation)

Description

A video, specifically using PowerPoint to structure that content, can be a very useful way for students to demonstrate their knowledge of a specific topic. The key question to remember is "what do you want them to do after your video is over?". The video should have factual evidence, data, documents and sources of information, to be credible.

Tips:

- When recording your video narration, it's very important to look at the camera to create the illusion of eye-contact with your audience. It means that wherever your camera is, that's where your notes (and thus your eyes) should be.

What to do?

Ask the students to:

- ***Create a video about a specific topic using PowerPoint slides to structure the content***
- ***Search for 2-3 relevant videos and justify why they are useful***

Free Advice is Seldom Cheap

Try to:

- Create a resource with a list of some potential recording software that the students can use, as well as websites that could provide technical support for any issues
- Specific a minimum and maximum allowable duration of the videos
- Consider the type of video that you wish the students to create, e.g. review of a specific topic, an interview or discussion, documenting an activity
- Encourage students to create content that compliments the video format of the podcast, and consider incorporating video clips from other recordings
- Encourage students to write a script before recording the content, make sure the script has a beginning, middle, and end
- Decide on the type of evaluation you will use; will you measure the quality of the content, or mark the quality of the recording, or both?
- Consider where the videos will be hosted
- Check the organisational policies about publishing content like this
- Encourage the students to decide on incidental music, visual effects, or video clips, and research existing resources

Video Checksheet

A task sheet for students to work through several times and hopefully then internalise.

*Podcast Title*_____

Evaluation criteria	**Notes**
What is the main topic being discussed?	Content:
Does the video comprehensively cover the main aspects of the topic?	Content:
How original is the content presented?	Content:
How complex is the content presented?	Content:
Does the video include references to academic research or quality data sources?	Content:
Is the video sufficiently entertaining?	Format:
Is it formal or informal in the manner it is delivered?	Format:
Is there a single presenter or multiple presenters?	Format:
How long is the video?	Format:
Was the video well-produced?	Format:
Was the video used to enhance the information communicated?	Format:
Is the use of terminology, and language of a high standard?	Format:
Is there a clear and logical structure to the video?	Structure:
Is there a smooth transition between sub-topics?	Structure:
Is there a logical internal structure within each sub-topic?	Structure:
Is there good quality data being used to structure the content?	Structure:
Is there a good clear introduction at the start of the video?	Structure:
Is there a good clear summary at the end of the video?	Structure:

Appendix A. Converting Checksheets into Rubrics

Let’s take the example of the Podcast checksheet:

*Podcast Title*_____

Evaluation criteria	**Notes**
What is the main topic being discussed?	Content:
Does the podcast comprehensively cover the main aspects of the topic?	Content:
How original is the content presented?	Content:
How complex is the content presented?	Content:
Does the podcast include references to academic research or quality data sources?	Content:
Is the podcast sufficiently entertaining?	Format:
Is it formal or informal in the manner it is delivered?	Format:
Is there a single presenter or multiple presenters?	Format:
How long is the podcast?	Format:
Was the audio well-produced?	Format:
Was the audio used to enhance the information communicated?	Format:
Is the use of terminology, and language of a high standard?	Format:
Is there a clear and logical structure to the podcast?	Structure:
Is there a smooth transition between sub-topics?	Structure:
Is there a logical internal structure within each sub-topic?	Structure:
Is there good quality data being used to structure the content?	Structure:
Is there a good clear introduction at the start of the podcast?	Structure:
Is there a good clear summary at the end of the podcast?	Structure:

Move the Criteria on the Right to the Left:

Criteria
Content
Format
Structure

Assign a percentage criteria based on the number of descriptors on the left:

Criteria	%
Content	30%
Format	35%
Structure	35%

Add marking ranges to the right of the table:

Criteria	%	Poor	OK	Good	Excellent
Content	30%				
Format	35%				
Structure	35%				

Consider using the following words for each marking range:

Criteria	%	Poor	OK	Good	Excellent
Content	30%	*No…* *Not…*	*A little…* *weak…*	*Somewhat…* *Good…*	*Highly…* *Very…*
Format	35%	*No…* *Not…*	*A little…* *weak…*	*Somewhat…* *Good…*	*Highly…* *Very…*
Structure	35%	*No…* *Not…*	*A little…* *weak…*	*Somewhat…* *Good…*	*Highly…* *Very…*

Calculate percentage ranges using the following table:

Poor	OK	Good	Excellent
0-39%	*40-54%*	*55-69%*	*70-100%*

For each percentage criteria, calculate the ranges:

Criteria	%	Poor	OK	Good	Excellent
Content	**30%**	0-12%	13-19%	20-25%	25-30%
Format	**35%**	0-14%	15-21%	22-28%	29-35%
Structure	**35%**	0-14%	15-21%	22-28%	29-35%

Identify themes per criteria based on descriptors:

Criteria	%	Poor	OK	Good	Excellent
Content	30%	comprehensively originally complexity academic sources	comprehensively originally complexity academic sources	comprehensively originally complexity academic sources	comprehensively originally complexity academic sources
Format	35%	Entertaining Format-complexity well-produced audio is helpful	Entertaining Format-complexity well-produced audio is helpful	Entertaining Format-complexity well-produced audio is helpful	Entertaining Format-complexity well-produced audio is helpful
Structure	35%	logical structure between sub-topics logical structure inside each sub- topic. Introduction and conclusion	logical structure between sub-topics logical structure inside each sub- topic. Introduction and conclusion	logical structure between sub-topics logical structure inside each sub- topic. Introduction and conclusion	logical structure between sub-topics logical structure inside each sub- topic. Introduction and conclusion

Add percentage ranges:

Criteria	%	Poor	OK	Good	Excellent
Content	30%	comprehensively originally complexity academic sources	comprehensively originally complexity academic sources	comprehensively originally complexity academic sources	comprehensively originally complexity academic sources
		0-12%	13-19%	20-25%	25-30%
Format	35%	Entertaining Format-complexity well-produced audio is helpful	Entertaining Format-complexity well-produced audio is helpful	Entertaining Format-complexity well-produced audio is helpful	Entertaining Format-complexity well-produced audio is helpful
		0-14%	15-21%	22-28%	29-35%
Structure	35%	logical structure between sub-topics logical structure inside each sub- topic. Introduction and conclusion	logical structure between sub-topics logical structure inside each sub- topic. Introduction and conclusion	logical structure between sub-topics logical structure inside each sub- topic. Introduction and conclusion	logical structure between sub-topics logical structure inside each sub- topic. Introduction and conclusion
		0-14%	15-21%	22-28%	29-35%

Criteria	%	Poor	OK	Good	Excellent
Content	30%	Not covered comprehensively, originally or with complexity. No academic sources.	Covered a little comprehensively, originally and with complexity. A few academic sources.	Covered somewhat comprehensively, originally and with complexity. Some academic sources.	Content is highly covered comprehensively, originally and with complexity. Excellent academic sources.
		0-12%	13-19%	20-25%	25-30%
Format	35%	Content is not entertaining, and doesn't show complexity in format. Content not at all well-produced, and audio is unhelpful.	Content is a little entertaining, and shows little complexity in format. Content is a little well-produced, and audio is a little helpful.	Content is somewhat entertaining, and shows some complexity in format. Content is somewhat well-produced, and audio is somewhat helpful.	Content is very entertaining, and shows lots of complexity in format. Content is highly well-produced, and audio is very helpful.
		0-14%	15-21%	22-28%	29-35%
Structure	35%	Content has no logical structure between sub-topics or inside each sub-topic. Content has no introduction or conclusion	Content has weak logical structure between sub-topics or inside each sub-topic. Content has a weak introduction and conclusion	Content has good logical structure between sub-topics or inside each sub-topic. Content has a good introduction and conclusion	Content has excellent logical structure between sub-topics or inside each sub-topic. Content has an excellent introduction and conclusion
		0-14%	15-21%	22-28%	29-35%

Appendix B. Advice for Open Book Exams

Advice for Open Book Exams

In an Open Book Exam you are allowed to have access to books, papers and on-line content while doing the examination. This doesn't mean you have to study any less for this type of exam, it just means you focus more on understanding the key concepts, rather than memorizing facts, but you need to study just as much, and you need to memorize and master the key concepts.

Before the Exam

Decide on a reward you will give yourself after the exams are over (e.g. go for a walk in the park, download some music or a movie, visit a museum).

Identify key resources (web pages, documents, books) that are useful for this exam. For each important topic you are studying, create a one-page summary of that topic, including links to your key resources (URLs or page numbers). Your summary needs to start with the facts (figures, formula, dates, and values) and then add in your own interpretation and insight into this topic. Consider using a MindMap, Concept Map, or a collection of Post-it Notes; and if you can colour code things, that helps. Without looking at your summary, if you can clearly describe this topic in one sentence, that is a good sign you are getting a grasp on the topic.

Practice creating some exam questions (using the verbs below), and practice writing the answer, and time how long it took you to complete the answer. You can use the practice answers in the exam, but the chances are you won't be asked the exact same question. Chat to a fellow student online, and agree to take turns to teach a topic to each other.

During the Exam

You know how much time you have for the exam, you know how many questions you have; divide your time out so that you spend as much time on each question. Make sure you build in time to review your answers, and make any corrections.

If there are any questions you can answer without looking at your notes, do those first.

If you are answering a question and you get stuck, take a break for a minute, and if you still can't think what do to next, move onto another question, and once you have finished the new question, you should get back to the original question. If you start to feel nervous during the exam, take a moment; breathe in for three seconds, then hold your breath for three seconds, and finally breathe out for three seconds.

If there is a diagram in the exam, make sure you read the captions and legends on the diagrams, you'd be amazed how much information can be found there.

Never copy information directly from the reference material without putting it in quotation marks ("") and mention the source.

Once you have completed all of the questions, review the answers you have given. Check all the key facts and figures in your answers using the reference material, and see if there are any answers that can be strengthened by adding new points or arguments. Make sure you have left yourself enough time to upload your answers to the system.

After the Exam

Make sure you reward yourself for getting through the exams. Also try to do something relaxing like meditation or yoga. View the whole thing as a learning process.

Some Useful Tables

Possible Questions and What They Mean

Analyse	Break the question down into its components parts, e.g. if this is a case study, identify the people involved, the organisations, the technologies, and the policies
Assess	Judge the effectiveness of something, also look at its relevance, importance, suitability, and the value of it
Comment on	Write a brief summary of something, and drawn some conclusions
Compare	Explore the similarities and the differences between things
Construct	Build whatever is being asked, e.g. “Construct an ERD…”
Contrast	Explore the differences between things
Define	Provide the exact meaning of something, and include a reference if requested
Derive	Develop a result from the starting point stated in the question
Describe	Get a clear and detailed explanation of something, include important facts
Discuss	Describe in detail, highlighting different perspectives or issues
Evaluate	Describe how suitable something is for a given purpose, demonstrate judgement
Explain	Provide a clear meaning for something, with details and justification
Illustrate	Give an appropriate example of the scenario
Justify	Provide reasons to support a particular scenario
Propose	Select and describe a particular approach, with some justification
Recommend	This is exactly the same as **Propose**
Review	Give an overview, providing the key qualities and features
Show	Demonstrate a given proposal or result with evidence
State	Explain the details and facts of a given scenario
Suggest	Describe a range of approaches, with some justification
Summarize	Provide a list of the major ideas and themes of the scenario
Synthesize	Bring together different scenarios or component parts to create something new

Structure of an Exam Answer

Rough Work	Write out the key words, points, and plan for the answer
1. Introduction	Explain your understanding of your question, and how you intend to answer it
2. Points	Make one point per paragraph, and at the end of each paragraph show how this paragraph helps answer the question
3. Conclusion	Summarize the key points and how they answer the question

Structure of an Argument

1. Claim	Outline the main claim you are making, sometimes called the overall thesis
2. Grounds	Describe the evidence and facts that support your claim, best evidence first
3. Bridge	Explain and underscore how the **Grounds** supports your **Claim**
4. Backing	Add any additional logic or reasoning that support the **Bridge**
5. Counterclaim	Discuss the alternative perspectives that oppose your thesis
6. Rebuttal	Identify the weaknesses in the **Counterclaim** and present evidence that refutes it.