How I teach a study skills module to STEM students

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This document is designed for staff, although students may also benefit by looking at the tasks and associated feedback to see where my students lost marks. After some general comments, the nature of the student cohort, the syllabus and schedule is given, followed by a week-by-week specification of the tasks to be done (or started) in the lecture, seminar and 2-hour lab sessions. Given much commonality in the way students gained or lost marks for most of these tasks, I generally place a synopsis of individual feedback on our VLE. To encourage students to read this, the marks spreadsheet is placed as the last item in the feedback folder, so that students have to scroll down past the feedback. I do not know if they read it though! An amalgam of the last two year’s (fairly informal) feedback follows many of the tasks below.

**Why have a module on Study Skills?**

It is quite likely that you and your colleagues will not be entirely satisfied with the way students learn. It is not that they cannot, but rather that they do not. Symptoms included:

1. non-attendance at lectures and problem classes, unless it ‘counts’ i.e. there is some assessed work to be done. Some departments try to counter this by having very many assessments, not because we need more marks to make a judgement on the students, but simply to keep them on track. Whilst this may be successful to some degree and in the short term, it hardly accords with aims stated in mission statements along the lines of ‘creating autonomous learners’. It simply perpetuates ingrained attitudes from school that the mark, rather than the learning, is important. It must be simultaneously very stressful and boring for the students, taking all the fun out of learning. There is also the increasingly heavy load placed on academic and administrative staff to organise all these assessments.
2. inability to take notes during lectures and organise them afterwards. These valuable skills are simply missing from many students, who then are unable to benefit from the valuable learning that would otherwise take place. They often just sit there in classes, have little real engagement and wonder why they find it boring (often blaming staff for this). The problem is compounded by the fiction that it is all on the web or that it’s somehow their teachers’ job to put it all on the VLE. This probably comes from school-level education where they are given excellent textbooks/workbooks with it all laid out for them.
3. inability to meet deadlines. Clearly this is vital in the real world, but students often miss deadlines by simply not reading instructions (and seldom reading their university email) or leaving things to the very last minute and either submitting very poor work or none at all. The policy of some universities to allow last submission with a sliding marks cap perpetuates the problem – in fact it is often no penalty at all for the mediocre work that is often submitted late.

This list could go on! However, the above seem to be vital: we cannot teach students anything at all if they are not there, we cannot do the learning for students and if we continue to forgive students for late submissions, they will never behave professionally. Since we have taken on these students, and they have come to university in good faith, if these skills are missing then it is no good ignoring the fact, or blaming schools, parents or anyone else. They have to be taught them at university. Certainly few would claim to have a solution, let alone a ‘quick fix’, but at Brunel University we have run a Study Skills module into our Foundations of IT (FoIT) programme for over 20 years. FoIT is level 0 of a 4 year degree typically taken by about 100 students without the grades needed for entry into level 1 of a mathematics or computer science degree: as such these students are usually an extreme case of a cohort that lacks study skills. Generally, students intending to read mathematics take Algebra A and have A level mathematics at grades B-D, whilst those intending to read computer science take Algebra B and do not have A level mathematics in semester 1.

The object of this document is to share my experiences and to show how I teach study skills. Others will be able to take what they want from it, whether as a stand-alone module or embedded within other modules. Naturally for level 1 students the mathematical or computing content of the assignments would need to be beefed up, but the schedule and overall strategy will probably still prove useful.

**The syllabus**

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| --- |
| LEARNING OUTCOMES FOR THE MODULE  The module provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas:  (A) Knowledge and Understanding  Students will be able to  demonstrate awareness of elementary learning processes and aspects of academic study;   1. demonstrate that they have developed the characteristics of successful study and independent learning; 2. demonstrate an awareness of the role and potential of group work.   (B) Cognitive (thinking) Skills  Students will be able to   1. organise and manage their time, individually or as a group member; 2. organise their lecture notes in usable form, including for revision; 3. find out for themselves information relating to the subject studied; 4. communicate technical content in an appropriate style.   (C) Other Skills  Students will be able to demonstrate simple skills in the use of *Word* , including the use of equations and diagrams, *Excel* , and in oral presentation using *PowerPoint*. They will also create and edit simple web pages. |

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| --- |
| MAIN TOPICS OF STUDY:  Taking and organising effective lecture notes.  IT skills: Word, Excel, PowerPoint, including equations, tables and diagrams. Appropriate use of the internet.  Time management.  Information skills: finding information from a wide range of sources, report writing including technical material, oral presentation.  Problem solving skills.  Effective working in groups.  Examinations: revision strategies, examination techniques. |

The syllabus (and schedule) is deliberately designed to be flexible, to respond to the needs of the cohorts and so that staff can capitalise on opportunities for learning by bringing in Study Advisors, Careers staff, Librarians etc. to give lectures or workshops (followed by assessments marked by the module leader). The syllabus item “(A) Knowledge and Understanding” is unlikely to mean anything at all to students, and probably not much to many staff too. The same might apply to the Main Topics section. They are really aspirations. The tasks below indicate how these might be achieved.

The tasks were carried out over two semesters prior to this academic year (2014/15) when it was condensed into the autumn semester. Each task was marked and rather complete feedback was given individually and a synopsis included on the VLE (this is repeated below). This heavy staff load (marking 80-100 assignments almost every week) seems inescapable, but there is no exam (at least not yet). Seemingly this is in conflict with the comments in item 1 above: however, the paradox might be resolved by seeking to put in place an attitude where continuous assessment is no longer vital for learning – something these students do not have at the start but may have achieved by the end.

In weeks 1-11, there is typically one lecture, a tutorial (the cohort was split into 2 groups) and a two-hour PC lab session (staff member and a postgrad helper present).

**Students’ initial attitudes to Study Skills**

* It’s a joke module and an insult to my intelligence,
* it will be easy to pass and not require much effort,
* since I am at university, I must already have these study skills.

**Schedule**

A schedule follows: this tends to change frequently throughout the module to accommodate special events (e.g. Learning Week) and the availability of external staff from Careers, Library and Academic Skills (ASK). These staff were involved in the tasks’ specification but not in the marking/assessment.

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| --- | --- | --- | --- | --- | --- |
|  | **Schedule** |  |  |  |  |
|  | **Lectures** | **Labs** | **Seminars** | **Assessed Tasks** | **Marks** |
| Wk 1 | Note taking in lectures | BBL/email/Word/Excel - Tables, Eqn, Draw | Precis task | Word-processing, lecture notes & Diag plan & Confidence log | 20&20&10 |
| Wk 2 | Marketing yourself (Careers staff) | Applying for a job/Online numeracy test/ASK staff | English diagnostic tasks ( dictation & proof reading) | Numeracy tests & job letter/cv &Proof reading | 10&10/20&10 |
| Wk 3 | Web pages | Excel/Powerpoint/Web page setup | Time management & Bullets & Precis | Bullets/Precis | 10&10 |
| Wk 4 | Writing mathematics | Time management | Employability fayre | Excel & Powerpoint task & 24/7 timetable etc | 20&20 |
| Wk 5 | Effective writing (ASK staff) | Personal web page | Data display | Personal web page | 10 |
| Wk 6 | Information skills (Library staff) | Effective writing (task) |  | Effective writing task | 20 |
| Wk 7 | Plagiarism & Referencing (Library staff) | Information skills (Library staff) | Lecture notes leaflet | Information skills web page & leaflet | 20&10 |
| Wk 8 | Mathematical modelling | English computer test | group exercise on modelling | English computer tests | 10 |
| Wk 9 | Feedback on sem 1/SWOT explained |  | consultation on modelling | **Upload modelling talk** |  |
| Wk 10 | talk |  | talk | Updated cv, SWOT & SMARTs | 50 |
| Wk 11 | talk |  | talk |  |  |
| Wk 12 |  |  |  | modelling report & talk wk 10-12 | 20&10 |
|  |  |  |  |  | *320 marks* |

**The tasks**

Some assignments were done there are then in class; others were specified on the VLE and students needed to upload them there. Typically I then printed them out and added comments/feedback. In either case, no late submission was allowed for any reason at all (students could submit mitigating circumstances but these never lead to any extensions or a mark). In effect, every assignment had time management as a required learning outcome.

After most assignments, in addition to individual feedback being written on their work, a synopsis of the main points and recurring themes was placed on the VLE together with anonymized examples of the best work (with the students’ permissions). The feedback synopsis is given below after each task where appropriate, but attachments of exemplars is omitted here since permission to use these was only given for the rest of the class to view their (anonymized) work.

About half way through the semester, the following feedback was given (it speaks for itself):

### General feedback

Here's how to get better marks for all assignments!

Use sensible file names & extensions (I suggest calling your file by the task name itself). Use folders on your Brunel h: drive properly and logically. Several students have submitted the wrong files to BBL.

Include your full name (or names in the case of group work) on the title slide or header of documents, or under the title. Note: I do not know you by your first names, still less your street names, so submitting work done by Asbo or Gazza will not give you any marks! I need your FIRST NAME & YOUR SURNAME (in full).

Submit on time on BBL. It is no good waiting until just before the deadline, finding your ISP is down and then failing to submit. Don't send me your submission by email if it should have been submitted via BBL (I will not mark it!).

Follow the instructions fully and check them again before you submit to make sure you have done it ALL. If you are asked for e.g. a Word .doc or .docx, do not submit a .pdf or .odt etc.

If you do need to email staff, use your Brunel email address, not Hotmail, Gmail etc. Then we will know who you are. We do not usually reply to private accounts since anyone could set them up claiming to be you e.g. [GreenhowM123@hotmail.com](mailto:GreenhowM123@hotmail.com) would look like me wouldn't it? I have no such account! If it exists, it might have been set up by someone who is trying to check up on me – in your case this could be your parents!

**Week 0 (Induction week)**

Induction week PC lab: basics of email and the University’s VLE, registration on optional modules. Three short mathematics diagnostic online tests were started, to be used in a week 1 assignment.

**Weekly task weeks 1-10 (later split into two tasks weeks 1-6 and 7-11 and just handwritten and then scanned)**

The students were given a ‘diary’ form to fill in each week, as follows:

*Top: Weekly task page 1*

*Module name/code:*

*Synopsis of this week’s learning material (expand, up to 2 pages as needed)*

*…*

*Bottom: Questions to ask in seminars/labs:*

*Then final page:*

*Weekly task page 3 To Do List*

*(put a list of study tasks to be done here. You can also include personal tasks if you wish (e.g. bath the dog, attend wedding, go skydiving etc.)*

*Instructions: download the form and either edit it or print it out and use handwriting. Provide a synopsis of the* ***main points*** *of the taught material for modules (Algebra A or B) and then (Intro to Computing or Intro to Economics), but NOT MA0490 Study Skills. Give 2 or 3 questions you plan to ask in a seminar. The main points should include equations and diagrams as required, and summarise (not replace) your fuller lecture notes.*

*As I said, this is a new task to Study Skills, I am taking the chance now to tweak it a bit by replacing the weekly submission with a synoptic one at the end.*

*I overlooked reading week in week 7 for EC0600, since we don’t have reading weeks in maths! For week 7 a synopsis of what you revised for the week 8 test would be useful to you, so do that instead of a summary of lectures please.*

*This replacement task is now slightly different! By the deadline, please upload ONE SINGLE WORD DOCUMENT for all 10 weeks (in order). This supersedes the previous assignment for weeks 1-5 which I will not now be marking. This gives those that haven't finished it yet further time, whilst for those excellent students that have, just cut and paste your documents together and carry on with weeks 6-10. This should be a good way to  focus your studies for the next few weeks and kick start your revision.*

*I will then mark the whole document, over the Xmas break probably. The combined task is worth 20 marks now (not 10+10 as previously).*

### Feedback on weekly tasks

This replaces an earlier revision notes exercise (see week11 below) and was very popular and well done by most students. Most saw the point of summarizing lectures as they went along and this is surely useful for revision for exams in week 12. Most used Word; whilst this is sensible, it tended to diminish the use of graphics like flow charts, graphs, organization trees etc. Probably a combination of typed text and scanned in freehand drawings would have been best here. I cannot say if this task improved engagement in lectures or seminars/labs, but it did seem to at least keep students in touch with the taught content, meaning that they could more easily resume after any breaks taken. Students rarely listed questions to ask or completed the To Do list.

A concern could be that this replaced the Revision Plan of earlier years. It is not known yet what effect this may have on exam performance.

Student feedback indicates that some would prefer a weekly submission as in the original task specification; this would be harder to administer but may be worthwhile.

­­­**Week 1**

**Lecture 1:**

The Cornell method of note taking was introduced <http://lsc.cornell.edu/LSC_Resources/cornellsystem.pdf> . A 20 minute lecture was given to test whether or not students could use this method. The lecture was deliberately rather bad; much was explained, but only the basics (keywords and equations) were written on the board. The lecture was on a new, but relatively easy topic – in this case it was market equilibria using a 2x2 simultaneous equation system. All students will have seen simultaneous equations but would have to listen and understand the economics application and annotate their lecture notes.

### Feedback on lecture notes task:

### The main thing to think about here was to stress the purpose of taking lecture notes: this will inform how you take them.

Mostly I got simply a more-or-less accurate copy of what I wrote on the board and nothing else. Whilst this is NECESSARY it is not SUFFICIENT for your lecture notes to be useful. You certainly need to think about the page layout/format using underlined headers and put KEYWORDS in the margin. A SUMMARY at the end would also have been useful to you.

The other main point is that you need to ANNOTATE the material from the board with information that I said but did not write down. This was poorly done by most. Including this would make the LOGIC or STORYLINE of your notes much more sensible (and useful for revision) so that they are not just a collection of unconnected facts.

I attach a similar submission from a previous year (with permission!) which went a long way to being a decent set of notes, but is still capable of some improvement.

Finally being able to take accurate and useful notes is a vital transferrable skill in any graduate-style job where you will be attending meetings and working with others. Even if someone else is taking the minutes, you'll need your own set of notes too.

**Seminar 1:** group task on comprehension of a scientific article with discussion and formulation of bullet points. This is preparation for seminar 3 below.

**Lab 1:** Email introduction of acceptable-use protocols and send three interesting facts about yourself to your personal tutor. Introduction to Word tables, drawing and equation editor (surprisingly poor usage by some throughout the entire semester). Introduction to Excel formula bar and graph/chart plotting. The graph plotting was often poor with some students unsure of what was being plotted against what - many plotted f(x) against cell number rather than *x*. This led to a short exercise on quadratics to be done in pairs. The first part was handwritten and scanned to the VLE. This had to be typeset. The second half was to include their own extensions and ideas. This allowed discussion of the mathematics (a useful reinforcement of the algebra modules for many since only about half the class have A level mathematics), promoted fluency with the software (which many students already know to some extent) and ensured they could submit work via the VLE correctly. This had been covered already in Induction Week, but reminders were certainly necessary.

Another assignment was to document the results of their induction week diagnostic tests and make a plan to seek help from the Mathematics Support Tutor. Specific instructions were:

*You had the following online tests to do during Induction Week: a numeracy test, a mixture of maths topics & an algebra test.*

*As these are DIAGNOSTIC tests, no marks were be awarded of course. However, you will need to have done all three tests to complete this assignment as follows:*

*a) create a word document with the results of your test copied and pasted into it (from your best attempt using the screen at the end). Those of you (excellent people) who have already done the test(s) can email me for their results or do the test again if they want to improve. Others can do the tests now.*

*b) reflect on the questions you got wrong and prioritise them in order of importance. Then include a plan in your Word document to tackle any shortcomings i.e. which questions you will take to the Mathematics Support Tutor, which to your lecturers and which to the postgraduate seminar helper. FILE this document at Brunel on your h: drive with a sensible name in your h:\university\MA0490 folder*

*c) Fill in the attached confidence log and FILE it at Brunel on your h: drive. (You will need this for a later exercise)*

*Submit both your Word doc and confidence log Excel file via BlackBoard Learn (BBL) by the deadline.*

*You will be marked not on the maths you already know, but on the realism of your reflection and plan.*

### Feedback on Word Quadratics Exercise

Some or all of the following may apply to you, so read it all please (there's no particular order here):

header/footer - some omitted their name and the date, some had no header at all,

start with a title in larger font and centred,

the general quadratic formula was wrong in places and often this part was not completed i.e. giving the roots in simplified surd form (followed by decimal values). A few of you had the incorrect sign for c i.e. 29/5, not -29/5,

use the equation editor to include all of the equation properly, not just parts of it. You really all have to be able to do this, so if you avoided its use, ask someone ... it's not hard! Do not include words here. Use the proper superscript for powers (not ^) and multiplication (not \*),

Be consistent in notation i.e. *x*, *f* and *g* not changing sporadically to X, F and G,

think about layout (do not split tables over pages or have huge white spaces in your text) and do not include blank pages at the end of your document,

Find out about absolute and relative cell referencing in Excel - it's important! Graphs were often not smooth since not enough points were plotted and often incorrect (not plotted against x but against cell number). The key on the graph was often unedited and data points on the graph were added when there are none for a function. Cut and paste the data and graph from Excel (not Edexcel as someone had it!),

choose a sensible file name and file in h:\university\MA0490 or some similar logical folder structure and name,

tables and figures both need a caption (nobody did this).

Finally, use the spelling and grammar checkers.

### Feedback on Reflection on Diagnostic tests

Of those that did it, most did the Diagnostic Reflective Exercise very well and probably learned a lot. If you didn't do it then you get zero of course and there's no extensions, but more importantly, you'll have missed an opportunity!

Just so you know, the exercise was about the quality of your reflection, not how good your maths is right now (it will get better!).

A few points to bear in mind and improve in the future:

a) you have to ENGAGE in the task, not just capture a few screen shots and write one or two words under them. You were asked to do all three tests, not just one,

b) FOLLOW THE INSTRUCTIONS. Two files were required to be uploaded to BBL (not emailed to me which I will not mark). One file was the confidence log (.xls) and another was a Word .doc or .docx (not .odt or .jpg etc). If you submitted only one, then you threw away marks - not a great idea. Make sure your file names are sensible and meaningful (not  task\_for\_Friday.doc) and not too big (one was over 10 Mb).

c) now you need to follow this up by asking in seminars, then ask the Maths Support Tutor in ASK if things are not clear (and then me as a last resort but not by email). Note your lecturers are Olga and Sarah or Dr Kaplunov and Ms Summerbell ... neither of them are "Miss"!

Anyway, that's enough grumping from me - those that did this task mostly did a great job and now can follow that up to become excellent at maths! Make sure you ask straight questions and you'll get straight answers!

**Week 2**

**Lecture 2:** Introduction to Careers Officer and a talk by him on applying for jobs (CVs and letters of application). The task was to apply for a clerical job with a letter and CV, using slides by the Careers Officer and reference to “Getting a job” in Study Skills Online.

**Seminar 2:** This comprised a short dictation and a proof reading exercise. Very few students did this perfectly and a few were identified as needing specialist help from our study advisors, Language Centre and/or dyslexia support staff. Some were advised to read a quality newspaper every week to improve grammar, spelling and vocabulary – this advice recurs throughout the module in fact.

### Feedback on English diagnostics

The English diagnostic exercises were not that easy, but many of you did well. However if you got 3/10 or below, please, please, please go and see the ASK study support staff. Otherwise poor English will simply cost you marks throughout your degree and cost you a decent career afterwards. It’s that important. One or two of you also need to see me privately for another reason, so if I have said that on your returned work, just catch me in my office sometime (email first) or simply drop by during my office hours Mon 12-13 & Tue 15-16. This is also important.

The dictation threw up several points:

Some of you need to listen more carefully.

Spelling: ‘words of the week’ are ‘efficacy’ and ‘pedagogy’. These are not very usual words but worth knowing so look them up. It’s Discrete Maths, not Discreet Maths (discreet means something else entirely). It was reasonable to expect the word ‘feasible’ to be known, but it wasn’t and produced some strange spelling (the best being ‘phisable’ which I think we ought to have in the English language so can someone come up with a meaning please?). Note the spelling of ‘therefore’ and that it’s one word. Some of you used “our” when you needed “are”. Despite sounding similar (i.e. homonyms) they are very different words of course.

Punctuation: school/university interface … with a forward slash i.e. /

Computer-aided assessment has a hyphen. Note computer-aided here is a compound adjective and so has the hyphen (like ‘superfluous-hair remover’ would remove superfluous hair and not be hair remover that you don’t need).

It was “questions’ design …” i.e. the possessive case in the plural so note where the apostrophe goes.

Don’t use sporadic capitals in the middle of sentences – this is only correct for proper nouns e.g. “That lecturer Martin gives us a hard time!”

Numbers over 10 can be written as numbers e.g. 262, but otherwise write them in full e.g. ‘five’ not ‘5’.

Do use paragraphs properly. Some had every sentence as a new paragraph.

Don’t try to disguise poor spelling by poor handwriting or abbreviations – this guarantees losing marks and losing feedback too.

For the proof reading, there were a lot of errors to find and most of you did a fairly poor job at finding them all. Be far more careful and don’t rush it in future. Errors cost you (as the Careers staff member said in his talks too).

It’s “mathematical and statistical skills” since mathematics or statistics are nouns, not adjectives.

Formulas or formulae … both are acceptable.

There’s a difference between “to” and “too” which means "also".

For the ONE SHORT sentence required by item 3, please give me exactly that. Some gave me three sentences, others one sentence that was as long as the original. Clearly some of you didn’t quite understand the original, so please re-read it. Do not use “however” when “but” will do i.e. keep your English clear, simple and concise. Note “alot” and “aswell” are not (yet) English words.

As you can imagine, marking this was not the most interesting thing I have ever done so thanks for the following inputs: Kinga’s PhD abstract contained "... discrete and decision mathematics at the school/university interface ... set in various topic contexts ..." but this wasn't exciting enough for some of you who variously came up with:

*"... discrete and discussion (or discretion) mathematics at the school/university interfaith ... set in various comic contexts ..."*

which I enjoyed. Maybe we need a new module in discussion mathematics?

**Lab 2:** Online numeracy test and introduction to the Mathematics Support Tutor who attended the lab for the first 10 minutes and spoke about what her role is. Continued work on job application tasks.

### Feedback on CVs and letters of application (from Ingrid Greenhow)

*Layout of letter:*

*your address, but not your name should be top left, incl postcode, phone number and email address.*

*If Dear Sir or Madam, then end with Yours faithfully,*

*If Dear Mr Smith, then end with Yours sincerely,*

*Leave a space for signature and then type you proper name afterwards.*

Six students achieved 9 or more for their letter of application. I would invite them to interview, but only if their CV scored 18 or more. Remember, employers read the letter first: if it doesn’t grab their attention, then they won’t bother reading your CV.

Students who followed the Study Skills Online instructions on how to set out a CV scored better than those who did not.

Don’t use fancy formatting, coloured inks or flowery borders. Make sure your CV is clear and easy to read, otherwise the employer will give up if s/he is reading 100 applications.

Don’t make your CV too short. Don’t make it too long either. Two pages long is about right.

What are you skills? Microsoft applications? Languages? Programming skills? Make the most of yourself in this section.

Get someone else to read it through and ask you questions if anything isn’t clear.

DON’T BOTHER WITH A PERSONAL PROFILE AT THE TOP. THEY ARE VERY ANNOYING WAFFLE.  I don’t read them. Use any real information in the profile to expand on your skills and work experience sections. This will provide evidence for your claims!

Don’t boast. Don’t say you are perfect for this job: the employer will decide.

Include referees: the employer may not have time to contact you and ask for details. S/he will just interview people who have included referees.

**Week 3**

**Lecture 3:** web pages and basics of html

**Seminar 3:** Précis task. Twelve versions of the précis were handed out so that collusion was not possible. The topics were accessible but scientific, technical or educational in nature and about 300 words long. The task was to write make about 10 bullet points (10 marks) and then rewrite them in about 100 words of proper English, with a word count at the end (10 marks).

**Feedback on précis and bullets (from Study Skills Online)**

 If you are asked to write a précis or summary, it will be designed to test your   
comprehension and writing skills. You must therefore cover ALL OF THE MAIN   
POINTS AND NOTHING ELSE. Do not include ideas which were not in the original   
text, no matter how obvious, or your own comments, no matter how strongly you   
agree or disagree with the original text. You are being asked to provide an   
editorial summary - not a critique - of the material, and your marks will   
reflect this. Under exam conditions you will need to plan your time. In any   
case, begin by reading the whole article to get an overview of the content and   
how it fits together. Next read it again and make notes and/or bullet points.   
Order your notes in terms of the original's logic and priorities. Only after   
this is clear in your mind should you start writing from your notes in your own   
words. Do not copy extensively from the text; use reported rather than direct   
speech. Your title should state you are writing a précis of "Original Title by   
Author ", so it is not necessary to waste words such as "The article states ...   
" or "Author goes on to say ...". Be economical in your sentence construction,   
but make sure the logic of the original still follows in your summary (remember   
to use paragraphs effectively); do not write a set of unconnected bullet points.   
Read the article again to check you have covered all the main points; expand or   
contract your précis as needed to fit the required length/word count. For   
assignments, read your work 2 days after writing it to make sure it actually   
makes sense before you hand it in

**Lab 3:** [PowerPoint group task](https://blackboard.brunel.ac.uk/webapps/assignment/uploadAssignment?content_id=_457328_1&course_id=_18216_1&assign_group_id=&mode=cpview)

Instructions: form a group of 3 or 4 people (not 1,2,5,6...), preferably with at least one group member doing Algebra A. You form this group and I am not going to be involved at all in this.

The task is to create a Powerpoint file of about 6 slides that explore the mathematics in the attached pdf and create a useful learning resource to explore and **explain** the effect of the parameters on the graph of a quadratic function. I will want proper equations from the equation editor and proper graphs from Excel pasted into your slides.

You need to decide the content - the attached pdf is just to get you started. I want a lot more than this!

The first slide must contain all the group members' full names (first names and surnames) and userids (of the form cs15\*\*\*)

OR

### The task is to write a Powerpoint file of between 5-10 slides to explain the graphical solution of simultaneous equations. You should start with straight lines, then consider cases where there is no solution or many solutions. What would happen if there are three linear equations - would a solution be possible and if so, under what conditions? How about if you change the equations to inequations e.g. 2x+3y >10 & x-y <4 say.

You can also consider the solution of a pair of equations, one linear and one quadratic ... or even two quadratics.

A feature of this work should be to use Excel to produce graphs, tables etc. which are then imported into PowerPoint.

Focus on explaining what the graphs mean so that this becomes a useful learning resource. Read the advice on Presentations in Study Skills Online.

This is a GROUP EXERCISE: groups must comprise 3 or 4 members (nothing else will do or you'll lose marks heavily - and solo efforts will get zero!).  It would be a good idea to form groups with members from both Algebra A and B modules. You may discuss this task with your mentors.

Remember to put ALL names on the first slide under the title of your talk.

**Feedback on** [**PowerPoint group task**](https://blackboard.brunel.ac.uk/webapps/assignment/uploadAssignment?content_id=_457328_1&course_id=_18216_1&assign_group_id=&mode=cpview)

This was well done, but note that talks benefit from having a Title slide (with your names), an Introduction, some results slides, a Conclusion & Recommendations slide and some references.

**Week 4**

**Lecture 4:** Points to watch out for when writing mathematics, using charts and graphs etc. (Teacher’s note:next year this will need a specific task since in later assignments, the points raised were not acted on, even the mundane ones like figure numbers and captions, labelled axes and stated units.)

**Seminar 4:** Time off to attend Annual Employability Fayre or Plagiarism Awareness activities. This sort of central activity is scheduled when it occurs, with other activities being moved to accommodate them. An assessment can be set if required e.g. design a plagiarism-avoidance poster.

### Lab 4: [Time management task](https://blackboard.brunel.ac.uk/webapps/assignment/uploadAssignment?content_id=_464196_1&course_id=_18216_1&assign_group_id=&mode=cpview)

As a precursor to week 4's task, make a record now (in week 3) of:

a) where all your time is going (24/7). Include all activities, not just university-related ones,

b) make a list of tasks to be done (university and other) and categorise them into one of the following quadrants: (urgent/not urgent) versus (important/unimportant),

c) identify any issues that are stopping you achieving the best you can.

Your task is to submit a single Word document of 2 pages exactly, with your FULL name in the document header, as follows:

page 1: starting with your timetable, add rows and columns to make this 24/7, divided into hours but concatenating night hours when you should be sleeping e.g. one column for 23:00-07:00 say. Then add how you spend your time in broad categories e.g. private study, sport, sleep, paid employment, surfing the web/Facebook/Xbox/other time wasters(!) etc. This page should be in landscape orientation.

page 2: Include your list of tasks to be done (university and other), categorised into the following quadrants: urgent/not urgent versus important/unimportant. Now display the data on your timetable as a chart or charts of your choice (made in Excel, imported into Word). There should be at least a pie chart and a bar chart that displays the actuality of your time management and a clear display of your ideal use of time, perhaps as side-by-side bars for each category and another pie chart. You will also have to think about whether you want to stress actual hours spent of percentage of time on various activities. Finish with your list of any issues that are stopping you achieving the best you can.

To be submitted via BBL by the deadline NB SINGLE ATTEMPT so no second attempts allowed! This will lead into another task later in the semester.

### Feedback on Time Management task

Some general errors and comments are:

* + use colour in timetable - e.g. pastel fill colours to denote similar activities e.g. University modules (one colour for each maybe?). Link item colours in the table and charts.
  + don't just say 'Revision' or 'Private Study' - specify what you do (e.g. problem sheets, reading lecture notes etc.) and make sure this is spread fairly evenly between your modules.
  + don't use 3-D pie or bar charts … EVER!
  + use captions - many charts had no caption. Some bar charts also had topic labels missing.
  + make the document useful: many of you did not do a comparison bar chart of actual versus ideal hours spent on the topics - this would have been a good idea.
  + include a reflection on how you might improve your time management at the end.

You will get your mark and specific comments (often an edited form of the above) by email asap. Note: I am marking how well you have done the assignment, not whether I think you spend your time wisely and on suitable activities. In some cases you do not and I'll tell you, but I don't deduct marks for your life choices.

Having said that, some of you need to look at the amount of time you spend on Xbox/PlayStation/surfing the web/facebook. This is an unhealthy activity – please be less nerdy and live in the real world with real people!

Some of you spend 4 hours a day travelling – this is not sustainable. In the long run, spending a bit more now living near uni/on campus will be small fry compared with all the money the degree will cost you, so you want to get the best degree you can. Remember some employers regard 3rd class degrees as worse than no degree at all …

Update on task 2017/18

* **Time management task**

a) As a precursor for this week 4 task, you will have made a record of where all your time is going (24/7). Include will have recorded all activities, not just university-related ones.

Your task is to submit a single Word document of 2 pages exactly, that specify your time use for a typical term-time week based on your evidence from weeks 1-3 and the current week 4. Include your FULL name in the document header; then lay out the rest of the document as follows:

page 1: starting with your timetable, add rows and columns to make this 24/7, divided into hours but concatenating night hours when you should be sleeping e.g. one column for 23:00-07:00 say. Then shade the cells (not the text) to identify how you spend your time in each of the broad categories given below, using the colours given below. This page will probably be better in landscape orientation.

page 2: display the data on your timetable as a chart or charts of your choice (made in Excel, imported into Word), again using the same colour scheme. There should be at least a pie chart **and** a bar chart that displays the actuality of your time management and a clear display of your ideal use of time, as side-by-side bars for each category (i.e. a comparative bar chart) and another pie chart. You will also have to think about whether you want to stress actual hours spent or percentage of time on various activities. On your pie chart, state the percentages for each sector.

Here are the various categories (colours) you must use, and in this order:

Contact hours i.e. what's on your timetable (dark green), Private study (light green),

Sleep (grey),

Travel (dark red), Paid employment (light red), Domestic chores & eating (orange),

Social time, excluding phones & social media (yellow), family commitments (purple)

Sport light (light blue), Hobbies (dark blue),

Screen time i.e. video games, television, social media & time spent on phones (pink); this could be simultaneous with other things, so attribute time based on your % engagement with this

Other - specify this (white i.e. no background colour)

Finish the page with a few words on what you have learned from this exercise (if anything), including a list of any issues that are stopping you achieving the best you can.

To be submitted via BBL by the deadline.

You will have noticed that this specification is quite specific. The reason is that I would like to use this (and another task) in a project to understand what attributes successful students have, and what causes failure. The data submitted will be seen only be me and will used anonymously, in a summary form, and only for the purposes of this project. At the end of page 2, please state whether or not you give permission to use this data (either way, your mark will not be affected of course). If you wish to know more about this project, please ask me.

**Week 5**

### Lecture 5 was from a member of the Academic Skills (ASK) staff on effective writing.

**Seminar 5:** Writing Mathematics and Using Charts & Graphs (week 4 lecture continued) – see above comment in week 4.

**Lab 5 personal web page**

(Technical details of setting this up and using file permissions are omitted here.)

For this task I want you to design a SIMPLE web page using html tags in Notepad (or any other plain text editor). You may not use anything like Adobe Muse, Dreamweaver etc. for this assignment. Note - there are only 10 marks for this, so don't go overboard! Use all of the html tags in the attached file as appropriate and maybe a few others or these with options - look them up on the web. Once this is done and marked, then it will be your web page and you can then do what you like with it!

### Feedback on personal web page

Everyone who mounted a web page did the techno bits pretty well. I would have liked a mailto and a table in each, but no matter.

The content was much more sporadic: it was supposed to say something about YOU. The specification stated: "***Your task is to create your own personal web page - be professional since it will be publically available (i.e. don't put anything on it that you wouldn't want potential or existing employers ... or me to know.)"*** Some people hardly said anything, some didn't say anything at all. You don't get marks for being able to insert lots of pictures or videos (it's the browser being clever here, not you!). One or two just created the default web page and did nothing to it - this is something I suppose, but not much.

Some chose not to mount pictures of themselves - that's fine and there may be religious or personal reasons for this I suppose, so you didn't lose marks for that.

If you put your email address on a web page, make sure it's linked via a mailto:

If you have linked web pages, make sure they actually work (i.e. you have set the permissions so others can see them) and put a back button or link so users can return to the home page.

BTW you should not use other people's logos in your pages (incl. Brunel's logo) - this is a personal page not an official company page, so you are infringing their copyright etc.

Do not use 'odd' colour schemes e.g. silver on grey. People with colour blindness and/or dyslexia will not be able to read them. Keep the background fairly pastel, with a strong font colour that contrasts well.

Overall these were pretty good though and some were totally brilliant ... respect innit! Be sure to maintain them as you go along - potential employers may look at them!

### Week 6

### Lecture 6 was from a member of the Library staff on finding, and evaluating information from a variety of sources.

### Seminar 5: unscheduled to allow students time to work on Lab 6 task.

### Lab 6 Review of three or four comparable websites

### Write a comparative review of three or four web sites of competing companies (e.g. Homebase, Wickes, B&Q) or comparable organisations (e.g. universities, churches, government departments)

### • Submit as a group or 3 or 4 people

### • 1000-1500 words (excluding references in this count)

### • No more than three figures and three pages

### • Include a table that compares common HCI features e.g. usability, visual impact, organisation …

### • Due midnight on 2 November 2014 Submit via BBL

### The marking criteria and weightings are as follows

### • Identification and justification of your comparison scheme (20%)

### • Summary of HCI aspects with supporting evidence e.g. number of clicks needed to find information on each site – for example bath taps for Homebase etc. (20%)

### • Suggestions for at least one enhancement (10%)

### • Clarity of writing (30%)

### • Overall coherence – includes referencing and captions (20%)

### Feedback on web page comparisons

This task was generally very well done indeed - well done.

Marks could have been even higher if you had followed the specification, in particular the 3 page limit and the 20% for specifying and justifying your comparison criteria. Only one group defined what they meant by usability etc. - that was an excellent feature of their report.

It was group work with 3 or 4 in a group, so solo efforts, however good, got 0/20. Why do this?

Think more about the organisation of your report and how easy it is for your reader to find the information he/she wants to find. Use sections and break up large blocks of text with tables, diagrams, images etc. - all with a proper caption of course. Start with an informative title (not Web Comparison Task or similar) and include references at the end.

Put your names on your work ... not much to ask, but apparently too much for one group.

### Week 7

### Lecture 7: was from a member of the Library staff on citing and referencing information and understanding and avoiding plagiarism.

### Seminar 7: in pairs, create a leaflet on a topic taught in the algebra or computing module so far.

### Feedback on leaflet task

Some were good, some chaotic, some just a re-write of a page of lecture notes. Think about the page design before you start writing.

There were some 'odd' groups with non-existent members whose names were added by their friends who didn't know they were in the other seminar. No dubious practices in future please!

I have scanned the better ones and will put these up on BBL here: please read them - we'll vote for the best in each category next Monday.

Last years’ are also attached in case you want to use them.

### Lab 7: [Information skills web page](https://blackboard.brunel.ac.uk/webapps/assignment/uploadAssignment?content_id=_463595_1&course_id=_18216_1&assign_group_id=&mode=cpview)

*The requirement for this task is to research and then write a 500-600 word article as a website (html document) which focuses on all things scientific.  You are free to choose your own topic but it should be an aspect of science and technology which interests you but about which you have limited knowledge.  Examples of what you might choose to focus on include:*

*Computing: the evolution of android apps;*

*Medicine: the use of an aspect of technology, including computing, in modern medicine;*

*Mathematics: the practical application of a particular theory;*

*Engineering: the development of electric cars, etc*

*The level should be such that it is appropriate to an educated reader (at degree level say) but who does not have specialist knowledge in your chosen topic. In other words, the sort of person who reads 'grown up' newspapers like the Guardian, Times, Telegraph etc. and not comics like the Mail, Sun etc. Do not dumb down the content - it needs to contain science, facts and figures. Use tables and figures. Your article may contain up to three figures, properly referenced of course.*

*Try to be original with your topic choice; the above are examples only and it would be much more interesting for you to choose your own topic and have fun with finding out about it, rather than everyone focusing on the same thing.  Be sensible about your choice of topic too.  You will not be able to cover everything about the history of medicine in 500 words for example, so would do better to choose a more specific area on which to focus instead. Your topic must not be a topic covered in A level maths, physics, computing, biology, chemistry etc - it must be new to you.*

*You should use appropriate* ***academic resources*** *(you will learn how to find these during your session and lab with Jane Corder, your subject librarian) to find out about your subject.  You should assume that the reader has limited knowledge about your chosen subject and your assignment will need to include information from* ***at least 5 different sources, at least one of which should be a journal article****.*

*You must work in a team of 3, 4 or 5 people (not 1,2,6 or any other number - ok!). Setting up your group is entirely down to you - I will not help any students without a group to find one. I suggest you have two content contributors, an editor and a web page author in each team. At the end you should all know how to create a basic web page. I will go over some useful html tags next week. I do not want anything flashy done in e.g. Dreamweaver or exported from Word etc., but rather to be able to see the source is simple (write this in Notepad). I will mark the code as well as the content and you will lose all the coding marks if you use authoring tools rather than writing it in native html.*

*Your html file and any figures you link to must be uploaded here to BBL and include ALL names on it. One person only to submit for the entire group please.*

**Feedback on information skills web page**

There were some good choices of topic and this was generally well done, with interesting content in some cases. However:

do not just cut and paste from a variety of sources and hope it turns out ok. You need to make notes or bullet points from the source material and then re-write this in a logical and structured way IN YOUR OWN WORDS. We did such exercises in the précis tasks - now you should see why,

do not include material you do not understand - trying to look flashy just will not work, especially for the Modelling Assignment just started where you will be giving a talk and hence must be able to answer detailed questions on what you present,

avoid long quotes. One sentence, correctly identified as a quote, may be ok if it serves some specific purpose, but a whole paragraph is simply padding,

avoid plagiarism - American spelling is a give away that it's not your own words. I can tell if it's the work of a professional science writer ... and I can also use web search engines. I attach two helpful poster done last year (with permission but not referenced to avoid identifying the authors!),

a major part of the assignment was to use citations and references correctly and according to the Harvard System. Make sure you do this in future (no excuses).

Finally, you should put your first name & SURNAME on the document submitted, not just in the submission notes. I could not identify four students so they get no mark. Why do the work for no reward?

**Week 8**

Lecture 8: this lecture outlined what a mathematical model is, the need for approximations to formulate a model, its solution and comparison with reality (Kolb cycle). Several examples were looked at from the areas of statics, economics and geometry. No calculus was needed – only algebra that they would have already seen.

Lab 8: an online English diagnostic test (quite hard!).

Seminar 8: groups of students worked on their mathematical model, discussing its feasibility with the lecturer who drifted round to help each group in turn.

**Week 9 (omitted 2018/19)**

Lecture 9: the specification for the SWOT and SMARTs (see below) was explained. Then students formed small groups to give their views to staff on all modules on good and bad features and any other comments. These were collated, sent to staff who replied and then emailed to all students – this is a very effective and efficient way of getting student feedback.

*Individual Task: Reflective SWOT & SMARTs – 50 marks*

*SWOT*

(These instructions are very long and detailed; partly this is to ensure conformity of effort and consistency of marking, but also the ability to be able to break down and follow such instructions is a valuable student skill in itself.)

*Your SWOT & SMARTs task is to present a 6-8 page word-processed document* ***written in proper English*** *that reflects on your learning at Brunel University so far. Content and its structure will count for approximately 70% of the mark and the quality of your English will count for approximately 30% of the mark. However, generally writing well will help you to clarify your ideas in any case, so the two marks are dependent and the above is only a guide.*

*SWOT stands for Strengths, Weaknesses, Opportunities and Threats and is a very general way of analysing situations, in the present case, the status of your learning process. To help you, I have included in this folder some material from ‘Routes to Success’ from Martin Counihan, University of Southampton, Physics and Engineering, kindly made available under a Creative Commons Licence. This will help you structure your SWOT, but is not supposed to be a complete specification, merely a basis on which you can/must build to include your own strengths, weaknesses etc. You can download this, and much more, at:* [*http://skillsforscientists.pbworks.com/Resources*](http://skillsforscientists.pbworks.com/Resources)*, scroll to the ‘Other’ section at the bottom and look at “Routes to success”, download the zip file and extract it.*

*Your document should start with a brief introduction about your previous attitudes to study and the way you have been doing it. Then look at ‘Managing your Learning’ from “Routes to success” to see if any of the advice given applies to you. I do not know if this will be useful or if you see yourself as a given learner, so comment on this in a reasoned way in your appendix (not just ‘what a load of crap!’ or whatever). The same applies to online personality tests, but these are used by employers so you should have a look, especially those of the Jung and Briggs Myers type theory (do a Google search). State if you agree with the results and reference the Routes to Success and personality test(s) you have used properly of course.*

*In your introduction you should include a ‘stages of learning chart’ for all your current modules including Study Skills. You may combine them on the same chart if you wish. See the Introduction power point on the Routes to Success site. Each of the module’s topics/skills/techniques should be placed in one of the quadrants as appropriate (it’s very unlikely that they’ll all lie in the same place, so knowing where each lies and hence what you have to work on will be helpful).*

*You should also make use of the chart in ‘Being an independent learner’ that categorises tasks into important/not important versus urgent/not urgent. Give examples in each quadrant of where you spend time and specify where each module lies. Refer to this from your SW sections (but do not repeat it).*

*This concludes your Introduction.*

*In your strengths and weaknesses sections* ***(N.B. two separate sections are required)*** *you need to have a commentary explaining what your academic and wider strengths are, in study and elsewhere. Then do the same for your Weaknesses section.*

*In your O section firstly discuss your academic opportunities. Give an example in each of how you have clarified (if need be) and then acted on your feedback. In this section you must include non-academic opportunities too. This could include sport, cultural activities, paid employment etc. but make sure that the opportunities you have taken and describe will enhance your employability. So being a member of a theatre group shows you have many transferrable skills.*

*For your T section, read the Managing Stress and Time document. Make a mind map on your PC or by hand and scan it to include in your document, with the stressors in red and possible solutions in green on that diagram and use this to write a narrative text. You should include non-academic issues here too, especially if they affect your ability to study effectively (anything you write will be treated with discretion of course). Write a prioritised ‘to do’ list for your current situation. For a lecture you attended but did not follow, identify the reasons why. Again, a commentary is needed, not just the mind map and ‘to do’ list.*

*S. M. A. R. T.*

*In* ***the same Word document****, include one or two pages of SMARTS stating at least three goals for the next 12 months (only), according to the following specifications:*

*Set* ***Specific*** *Goals*

*Your goals must be clear and well defined. You must understand what you wish to achieve. Vague or generalised goals are not achievable because they don't provide sufficient direction.*

*Set* ***Measurable*** *Goals*

*Include precise amounts, dates, etc. in your goals so you can measure your degree of success. Without a way to measure your success you miss out on the celebration that comes with knowing you actually achieved something.*

*Set* ***Attainable*** *Goals*

*Make sure that it's possible to achieve the goals you set. If you set a goal that you have no hope of achieving, you will only demoralise yourself and erode your confidence. However, resist the urge to set goals that are too easy. By setting realistic yet challenging goals you hit the balance you need. These are the types of goals that require you to "raise the bar" and they bring the greatest personal satisfaction.*

*Set* ***Relevant*** *Goals*

*Goals should be relevant to the direction you want your life and career to take. By keeping goals aligned with this, you'll develop the focus you need to get ahead and do what you want.*

*Set* ***Time***

*Your goals must have a deadline. This again, is so that you know when to celebrate your success. When you are working on a deadline, your sense of urgency increases and achievement will come that much quicker.*

*Again, your choice of SMART goals should enhance your employability as well as you as a (hopefully interesting) person. You do not need to say HOW you will achieve these goals (that is the function of OBJECTIVES). Your SMARTs might include personal attributes like body weight or giving up smoking, but should also include some academic and cultural activities goals, and paid employment goals (if appropriate).Consider setting a goal to do something entirely new!*

*Conclude with a final section giving advice to yourself on what you need to do … and need to avoid doing in future!*

*Finally, include an appendix stating, with reasons, how useful or otherwise this task was, referring also to the Routes to Success material and, perhaps, the personality tests.*

*Submit one Word document covering the the whole task (SWOT and the SMARTs).*

*In brief you need to deliver a REPORT (not an essay) of 6-8 pages in WORD via BBL by the deadline comprising your:*

*Introduction: includes results of personality tests, ‘stages of learning chart’, Being an independent learner’ and other comments about how you view your studies.*

*Strengths*

*Weaknesses*

*Opportunities*

*Threats*

*SMARTS*

*Summary/conclusions*

*Appendix*

*References*

*Follow the above sections EXACTLY. Do all sections and do not combine any of them. Each section needs a section header and a narrative, not just tables and diagrams. All figures & tables should have a number and caption.*

*We will discuss your SWOT alongside your semester 1 results in a one-to-one meeting in January.*

*Revision Plan (****omitted in 2017/18*** *since Weekly tasks were introduced that provide de facto revision material)*

*In* ***the same Word document****, include a one or two page Revision Plan stating how you will plan your time over the period 1st Dec - 12th Dec. You need to include timetabled classes and class tests, and then plan your revision around these. Do not just say ‘Algebra revision’ or ‘Computing revision’ but rather, say what* ***topics*** *you will cover when explicitly. Your plan should also specify times spent doing worksheets and/or CAA tests. Include other commitments too, formatting these with light grey cells with short descriptive text e.g. employment, family etc.*

Seminar 9: students consulted the lecturer on their modelling tasks.

**Feedback on SWOT and SMARTs**

There were many excellent submissions so well done. However, read the following to make your writing even better in future. See especially section 4.16 on Set Work in Study Skills Online: <http://people.brunel.ac.uk/~mastmmg/ssguide/set_work.html>

1) put your name on your work in the header. In future, un-named work will not be marked!

2) meet the specification. I have said this before but the message isn't getting through to some of you. How do you expect to get all the marks if you do not do all that's required? So before you submit your work, re-read the specification to see that you have covered every single point. Some of the SWOTs were very unbalanced with lots about the SW parts, but little about the OT parts, and nothing on the SMARTs or the Appendix ... this is not good.

3) keep the English simple, clear and concise. Keep sentences short in general.

You must proof read your work (and use the spell checker). When doing this cross out all the words you do not ~~actually~~ need.

Some of you wrote in a very wordy way, some adopted what they assumed to be a 'grown-up' style and this made the meaning very unclear. Just write simply to say exactly what you mean. None of you speak like Yoda from Star Wars, but some of you write like him ... “Bad it is this to do”!

Use simpler alternatives i.e. however -> but, therefore -> so, due to the fact that -> because, 'myself' -> 'me' etc.

4) when conveying a lot of information, think carefully about formatting. It will make it far easier for your reader to know what they are reading any why if you use headers and sub-headers. Consider using bullet points for clarity. Use tables and diagrams as much as possible and put a table or figure number and caption on each.

5) if you cite something, then it must be in the reference list and vice versa. Use the Harvard system.

6) there was a lot of use of the conditional tense e.g. "I would say ..." with no condition(s) being applied! So again be straightforward e.g. "I am strong at algebra." not "I would say I am strong at algebra” (if asked?). or "My weakness would be ..." should be replaced by "My weakness is ..."

7) 'stress' is not a reflexive verb, despite common use. You cannot simply stress, you have to stress something e.g. applying a load to a chair would stress it.

8) avoid clichés like "out of my comfort zone" unless you actually want to sound like a football commentator! On this point, of course you'll be 'out of your comfort zone' at university - that's the point of it. Anyone who expects to see only things that are familiar to them had better leave now!

9) Statistics is the topic/module, not statistic (which is a single number, like a mean).

10) ‘practise’ is a verb, ‘practice’ is a noun. Learn the difference between quite and quiet. ‘Eat healthy’ should be ‘Eat healthily’.

13) one or two of the stressors diagrams were photographed rather than scanned: this is ok, but I do have to be able to read them!

14) put numbers and captions on any figures and tables

15) use UK not US English throughout.

General Feedback

This was generally well done but many were not specific enough in what they planned to revise: one doesn’t revise a module, but rather a topic, skill or technique. Don’t think of revision as time to be served, but rather as specific tasks to be done in an allocated slot.

Whilst reading the SWOTs a few general but very important issues struck me.

1. When I was a student I had far fewer distractions, but you are continually bombarded by them in the form of your phones, Facebook, YouTube, Netflix, Play Stations, video games and TV. How do you cope with this? I am really not sure I could, but it’s clear that the majority of you waste far too much time on these unhealthy and anti-social activities. Put away these devices and interact with real people and do real things instead! This looks like an addiction for a small minority which will need addressing, possibly with professional help.
2. Some of you have yet to create a social life at Brunel University and need to do so to avoid loneliness, get more out of the university experience and have more fun. Going home all the time will not resolve loneliness and home sickness.
3. Some of you have family responsibilities that seem unfair e.g. collecting siblings from school every day. You need to make clear to your family that you are not ‘just a student’ and therefore can be called on for such duties willy-nilly. Parents are responsible for their children – nobody else.
4. In your SMARTs quite a few of you have put 'lose weight' even to the extent of setting target weights to be achieved. Of course it's not good to be fat and this can lead to health problems, but it seems to me that some of you are having your 'self perception' dictated by what fashion and advertising people say. It's not good to be skinny either. Just be sensible and be happy in yourselves and the body you have! If you are not, get some help from a counsellor. This can be serious if not tackled. What’s more, very few employers (beyond professions like football or artists’ life models!) will use your BMI index or percentage body fat as a selection criteria!
5. If you really want something real to worry about, think about your smoking if you do it. Very few students have set giving up smoking as a goal, but cigarettes stand a very good chance of killing you, and in a very unpleasant and painful way too. Half of British adults of your age who smoke will die of smoking-related diseases. Don't fool yourself - you are not invincible. It's also bloody expensive and makes you smell too. So set this as a SMART if you want to be smart.
6. Hard on the heels of this danger is alcohol; binge drinking is extremely dangerous and costs the NHS £3bn a year. It can lead to a police record (with employment consequences), can wreck your health and often breaks up relationships. I am serious ... watch your alcohol consumption carefully; if you drink most days you are already an alcoholic, so seek help. Another SMART.
7. As for other drugs or substance abuse ... don't do this at all. Ditto gambling – it wrecks relationships and lives.
8. Finally some of you seem to regard your studies as something to fit round your paid employment. It MUST be the other way round and make sure that during term time, your paid employment does not exceed 15 hours, preferably about half that. Some of you seem to be wanting to develop yourselves in e.g. a retail career, even to the extent of wanting promotion etc. A fine goal, but you don't need a degree to do this. What's more, being paid about the minimum wage and putting your real career plans in danger by getting crap grades doesn't make any sense at all. Better to have a bigger debt and/or spend less, and have good prospects for later on. It's bloody competitive out there and employers don't want mediocre graduates for the better and more interesting jobs.

Any issues in the SWOTs are discussed in a 1-1 meeting with students early in the next semester when they receive their provision semester 1 grades. Students often are able to write down issues they would be reluctant to say face to face, and are usually very honest. This can be very helpful in resolving any issues or, more likely, referring students to expert help (e.g. financial advisors or counsellors).

**Week 9 Confidence appraisal task (first delivered 2018/19)**

You will have TAKEN A SCREEN SHOT of each of the initial confidence appraisal questions and a screen shot of YOUR OVERALL RESULTS given at the end of each of the Algebra (A or B) test 2. You should use all of these to inform the formulation of your 'mathematical stock take' and improvement plan. Test 2 is in the usual place: <http://people.brunel.ac.uk/~mastmmg/Batch%20Files/entry.htm>

The assignment is to create a single WORD document in LANDSCAPE with the following:

a) identify from your confidence levels, and from the diagnostic questions you did, where BOTH your strengths and weakness lie. Then create a plan for the corrective action you will take. Your plan must start with your First name, Surname, student number and pre-university mathematics qualification, whether you are doing Algebra A or B, and then a table. The table will usually be between 10 and 20 topics (in rows), as follows:

The first column must be the SPECIFIC topic (not vague categories like graphs of quadratics, but things like completing the square or partial fractions with a quadratic factor, etc.),

the next column should be the level of urgency (NOW, NEXT WEEK, LATER)

and the third column should indicate what resources you will use, e.g. books, your algebra teachers, ASK support tutor (usually Inna), MathCentre, maths e.g., other web sites, friends etc. This should all be on ONE PAGE.

b) include your screen shots for the confidence questions and the test 2 final summary screen as an appendix. Put two screen shots on each page, side by side.

This could be an important document in your discussions with your algebra lecturer and also with Inna in Academic Skills (ASK). If you do want to discuss it, take a print out to these excellent people who will be pleased to help you.

**Weeks 10, 11 & 12**

There was no formal teaching whilst student groups gave their modelling talks according to the following specification.

*Modelling talks - Weeks 10, 11 & 12 (10 marks) and Report Week 12 (20 marks)*

*In the lecture on 10th Nov I gave a talk about mathematical modelling. Your task now is to do some! It is to be done in groups of 4 or 5 people. Group membership is up to you, but it would be a good idea to work with someone new and have at least one group member who has done A level maths to cope with solving your problem (often by calculus). Once the groups have been formed, by start of week 9, email me the membership (names and userids) by Nov 18th. I will then tell you when your group is to talk. You must stick to these groups once emailed to me (do not include anyone else).*

*If you are not in a group, contact others in the same situation and get in a group pronto. This is your responsibility and I will not get involved in this at all.*

*This will probably be quite a challenging assignment, partly since I am not going to specify exactly what you are to do. You may talk with your other lecturers about specific maths or stats questions, and you may have ONE session with me of up to 15 minutes in week 9 (18th -22nd Nov). Arrange a time with me via email when all group members can be present. I will not give you advice on this assignment via email, so you will need to use this 15 minutes effectively i.e. have your questions properly prepared.*

*Requirements:*

1. *Powerpoint file put on a memory stick and uploaded to BBL by 24th Nov (for you to use in your talk and for my records)*
2. *5-8 minute talk (strictly enforced). I will choose on the day who will deliver the talk, so you all need to be prepared. (10 marks)*

*Naturally all sources should be properly referenced. Equations, diagrams, graphs etc should all be included properly (equations using the editor, figure captions and references).*

*I strongly recommend you read the section on Presentations in the Study Skills guide.*

*Marks will be awarded for both content and communication. As discussed in class, you will need to describe the real world situation, then the simplifying assumptions, the solution method, interpretation of the results, refinement if need be etc.* ***Remember: modelling is the process that leads to some sort of equation or algorithm. Simply stating and applying a formula is not modelling in iteslf.***

*Your talk should have an introduction, conclusions and recommendations for extending your model.*

*By the end of term (13th Dec) you must upload to BBL group report on your modelling topic (the same one that you talked about, but updated if need be). This is to be 3 to 5 pages, including diagrams and references. The names of all group members must be included … please! Again read the Study Skills Guide, especially the section on Set work. This part is worth 20 marks.*

*Possible subjects*

*You may not choose any topic in the A level syllabuses for maths or physics, especially PROJECTILES – I am fed up with them, ditto Achilles and the tortoise! You may build on A level topics however, doing some extension of one or them that is your own work. That is to say, you will not get any marks for the part in the A level syllabus, but may include it as background for your own topic extension.*

*Having said that, please do something original! You will get extra marks for originality.*

*Ideas for modelling classes include as a starting point:*

*Locus of point on ladder sliding down a wall.*

*Leaning Tower of blocks*

*Light decay problem/ light on wall problem*

*Open-ended cone of max volume made from a circle of paper.*

*Cone of max volume given fixed surface area.*

*Population dynamics*

*Gear Change problem - draw position, velocity and acceleration graphs.*

*Longest ladder that will go round a corner in a corridor*

*Slide Rule - how does it work?*

*Koch curve - length and area*

*Traffic lights - two lanes -> single lane; how long should lights be for changing?*

*Golden ratio and the Fibonnaci sequence*

*Capsize of ships (simplify shape to be rectangles).*

*Pendulum swing from up to down - how fast is it then going?*

*Stability max of a beer can being drunk!*

*Cooling problem - milk in tea first, or better to let it cool and then add milk?*

*Maximise V of cuboid with SA fixed. Then do an open box.*

*Why are cells so small? Why are hovercraft so big?*

*How many ancestors do you have?*

*Friends of friends: if you know 100 people, and they know 100 people, how many levels of acquaintances do you need to connect everyone in the world (= 10 billion people i.e. 10^10 people)? See Mathematics Today April 2003 p 46.*

*Data display using charts and how to lie with them!*

*Probabilities – conditional etc. (could be example using genes i.e. marrying cousins)*

*Or take a photo of something that has mathematics behind its shape, function, design, production etc. and describe this maths.*

*The above focusses on a situation and asks you to use mathematical techniques as required to make progress with it. An alternative is to take some or all of the mathematical techniques you have learned in Algebra and ‘bring them to life” with examples of where they can be used. For example, “Quadratic equations are used in a), b) and c) … “ where your report goes on to explain a), b) and c) which should span a range of applications, e.g. mechanics, economics, computing, biology etc. Do this for several mathematical techniques.*

**Feedback on Modelling Talk & Report**

1. feedback was given to individual groups at the end of their session of 4 groups. The ‘Presentations’ part of Study Skills Online gives general advice, but the talks were generally well done. Comments on the content as given below.
2. The main point here is that there was a lot of confusion over what a mathematical model is and how it differs from a mathematical formula. Thus many groups started with a formula, taken from a source and correctly referenced, but failed to explain how it had been derived and what underlying assumptions had been made. Likewise some talks on algorithms did not explain clearly what the algorithm was by using a flow chart or similar.
3. Some reports were very descriptive and seemed to do everything they could to avoid stating any actual mathematics – hardly good given the specification.
4. It is about time the groups actually used the equation editor (not pasted graphics) for equations, included a figure/table number and caption, labelled axes and stated units on graphs and charts and cited all references in the text. I was not impressed by failure to do so and, yes, you lost marks as a result.
5. This was a group effort so at least one person should have proof read the submission before it was submitted. The English was incorrect in several cases and this should not have happened.

**Week 11 (omitted in 2017/18, included again 2018/19)**

*Your task is to compress your algebra (A or B) module into four A4 pages of handwritten REVISION NOTES, including diagrams, charts etc.*

*Then do the same for Introduction to Computing CS0001.*

*Finally scan all 8 pages*

*into pdf and submit that as one file*

*or scan to jpeg or tiff files and import these (Insert, Picture or Insert, Object) into Word*

*and upload this one file here by the deadline. For details on how to do this from any printing device at Brunel, visit:* [*https://intra.brunel.ac.uk/s/cc/kb/Pages/How-to-scan-a-document-to-email.aspx*](https://intra.brunel.ac.uk/s/cc/kb/Pages/How-to-scan-a-document-to-email.aspx)*, or use your own scanner if you have one. At Brunel, Jane Corder thinks it costs 2p per page so it will not exactly break the bank!*

**Feedback on Revision Notes**

This was well done or very well done, by those who did it. Presumably those that didn't have their own ways of revising - I hope so. However, you have missed out on the marks and also a chance to get a firm overview of algebra and computing modules which would have been enormously helpful to you I think.

A minority lost marks by not following the instructions (again), as follows:

General point: one file was required - not eight (you are pretty lucky that I even bothered to open them all and mark them ... some were actually very good in fact). One person submitted the wrong file and hence got zero. Eight pages were required, not 6,7 or 9-13.

This was potentially an interesting and useful assignment but in the event it was neither for many of you because you failed to engage with it properly. The most common problems were:

a) incompleteness; you really must span the syllabus and list all the skills, not just the ones at the start of the module. Notably some of you failed to give due attention to later topics. It is hard to believe that you were even in these lectures (for some of you this is certainly true!). Perhaps you delude yourself that you can get by without doing these topics at all. Think again!

b) listing things that are not in the syllabus - they will not suddenly appear in the exam!

c) not meeting the specification properly.

d) vagueness, especially in the timetable where some just said 'matrices' or 'programming languages' rather than specify which skill was being revised when. This was made clear in the specification. Similarly listing 'determinants' is too vague - it is a topic not a skill. What techniques for determinants do you need to know?

e) simply missing out a module e.g. no revision notes. Doing this automatically means that your mark will be almost halved.

f) making revision notes too long. The idea was to make a synopsis of your lecture notes, not to rewrite them. Making such a summary is an important part of the learning process.

I think you should now realise that the key to this assignment was having been to all the lectures and seminars, not just a sample or for a few topics at the start. You need to span the whole syllabus to succeed in the exams and in your first year. Being selective and writing-off some topics is a short-term and very poor strategy; even if you scrape though the exams, you are simply storing up problems for later study. Then you will need the omitted topics and skills and will have to learn them simultaneously with the content of the modules you are then taking - an unrealistically tough thing to achieve and you will probably fail to do so.

On the other hand, some of your efforts were really excellent (several getting full marks). I will put up the best ones on BBL so that you can all benefit. These students have consistently engaged and know what they are doing; so revision for them will actually be revision, not tackling a topic for the first time (which is what some of you will clearly have to do now, and mostly on your own without help in the scheduled lectures and seminars that have already taken place).

**Week 10/11 alternative to Revision notes (adopted 2016/17)**

*Make a detailed list of Topics for Algebra and Introduction to Computing. Do not just say ‘Algebra - quadratics’ or ‘Computing- hardware’ but rather, say what topics you will cover in some detail. For example, a topic might have a main topic (say quadratics) and then subtopics (e.g. factorisation, connection between roots, coefficients and factors, completing the square etc.).*

*Then colour code each topic with a traffic light:P green = fluent, amber = could do with some more practice, red = danger!*

*The submission is a three page Revision Plan in Word:*

*page 1 will be the detailed list of topics with traffic light colours for your Algebra module (indicate which one).*

*page 2 will be the same thing for your Computing module*

*page 3 will be a plan stating how you will plan your time over the period 1st Dec - 16th Dec at a rate of 2-3 hours per day, focusing on RED and then AMBER topics. Colour code this plan. You should not include timetabled classes and or other commitments, but rather you need to specify the TOPICS you need to revise and then allocate them to each day with a rough estimate of the time needed to revise, do some questions, get help etc.*

**Feedback on Revision Plan**

These were generally very good indeed with many excellent examples. Those who did lose marks lost them because of:

Revision topics

Incomplete coverage of all the topics in each module

Time plan

Not covering topics in enough detail e.g. ‘Matrices’ with no mention of what in the topic e.g. Gaussian elimination or Properties of determinants

Not spending roughly equal amounts of time on the two modules in your time plan

Not scheduling ‘green’ topics in the time plan; a few refresher sessions is always a good idea to cherry pick your best topics in the exam and be able to do these questions quickly

Not being specific in the time plan but just saying e.g. ‘Computing revision’

Inconsistent or no use of traffic light colours in the time plan

Plans that do not include the exam – some even continued to revise topics after the exam which is keen, but not very sensible!

General

Not doing all that was required/checking the specification before submission

Poor formatting and use of 4 pages

Wrong file type submitted

Poor file name

**Week 10/11 alternative to Revision notes (adopted 2017/18)**

replaced by weekly task 1-10 as above.

**Week 12**

This was assessment week. No study skills lectures, seminars or labs were held and no further tasks were set.

The above tasks were for a 12 week semester. Other tasks that could replace some of the above or be used in an extended module are given below.

### [*Report on a company or career path*](https://blackboard.brunel.ac.uk/webapps/assignment/uploadAssignment?content_id=_382964_1&course_id=_12181_1&assign_group_id=&mode=cpview)

*This assignment requires you to produce a 2-page report on a company or career path as a Word doc and submitted via BBL by <deadline>. The company or career path should be for a graduate style job or profession. So for example you could either:*

*a) describe, for example, a hi-tec computing company, or an oil giant, or a government department etc. and what it does. Do not include a history of the company or facts about its size, products or geographical spread. Certainly any 'sales talk' is unacceptable. Instead you will need to research the a specific department in some detail stating what attributes that department is looking for, which you have now and how you will strengthen these and achieve the ones that are missing. Include a road map of how you plan to become employable in the company. Give your references. Do not simply take chunks from corporate web sites. You must rewrite any facts you do take from company web sites in your own words.*

*or*

*b) e.g. say what investment bankers actually do, what attributes they need and how you think your degree will help you in this chosen path. State what attributes the profession is looking for, which you have now and how you will strengthen these and achieve the ones that are missing. You must include a road map of where you want to be by when - be realistic.*

*You may not say you intend to start your own company - this may be true, but will not be acceptable for the purposes of this assignment (in any case you'll need a plan B since few start-up companies are successful).*

[***Poster task***](https://blackboard.brunel.ac.uk/webapps/assignment/uploadAssignment?content_id=_384571_1&course_id=_12181_1&assign_group_id=&mode=cpview)

*The object of this task is to produce an A3 poster (i.e. a poster comprised of two sheets of A4 to be thought of as being side by side if in portrait or one above the other if in landscape). You are to upload this as a WORD doc or docx (nothing else) by the deadline.*

*The poster will describe the WORK (not the life and times) of a famous scientist of your choosing. However, be original - I do not want to read 10 posters on Newton, Einstein, Darwin etc., still less sit through 10 talks on them each! Explicitly the following are banned: Newton, Einstein, Darwin, Fleming, Hawking.*

*You should start with the scientist's name and dates of the scientist (but no other biographical details), outline some of their most important work (including equations etc.), explain why it is important (i.e. what impact they have had on science or more widely) and end with references (of course). Diagrams and figures are good, blocks of dense text are bad, so be extremely selective about what you present on a visually attractive poster. Equations will always be needed and these must be done using the Equation editor (not copied graphics).*

*'Scientist' is interpreted broadly and so can reflect your interests and intended degree. Mathematicians and computer scientists are certainly allowed, but so are biologists, chemists, physicists, geographers etc. The chosen scientist can come from any era you wish e.g. Ancient Greeks are just fine, so is Tim Berners-Lee. Inventors are NOT allowed, unless you describe the science behind their inventions.*

*Your intended audience is other FoIT students. Do NOT talk about science that they will not be able to understand, still less science that you do not understand (this will preclude most 20th century science).*

*Your poster will lead on to your talk to be done later (see the schedule).*

### [*Talk on famous scientist*](https://blackboard.brunel.ac.uk/webapps/assignment/uploadAssignment?content_id=_384595_1&course_id=_12181_1&assign_group_id=&mode=cpview)

*This task is EXTREMELY complicated to administer so pay attention! Follow these instructions:*

* + - *look on the schedule to see which group is talking when,*
    - *look on the marks spreadsheet to see which group you are in,*
    - *be at the right session - you will not get a second chance and you may not negotiate which session you are in (so don't even ask!). You do not need to attend any of the other sessions (although you may do so if you wish),*
    - *upload your ppt or pptx file by the deadline - if you do not, you will not be allowed to give your talk and hence get no marks. I will log into the PC and you will find your talk in my folder. No other way of accessing your talk will be allowed.*

*The talk is a follow-on from the poster session. You will be given a 4-minute slot each (strictly enforced!).*

*The object of this task is to produce powerpoint with up to 5 slides. You are to upload this as a POWERPOINT ppt or pptx (nothing else) by the deadline.*

*Your talk will describe the WORK (not the life and times) of a famous scientist of your choosing (probably the same one as for your poster but it can be different if you wish). However, be original - I do not want to hear 10 talks on Newton, Einstein, Darwin! Explicitly the following are banned: Newton, Einstein, Darwin, Fleming, Hawking.*

*You should start with the scientist's name and dates of the scientist (but no other biographical details), outline some of their most important work (including equations etc), explain why it is important (i.e. what impact they have had on science or more widely) and end with references (of course). Diagrams and figures are good, blocks of dense text are bad, so be extremely selective about what you present - see 'Presentations' in Study Skills Online for advice.*

*Equations will always be needed and these must be done using the Equation editor (not copied graphics).*

*'Scientist' is interpreted broadly and so can reflect your interests and intended degree. Mathematicians and computer scientists are certainly allowed, but so are biologists, chemists, physicists, geographers etc. The chosen scientist can come from any era you wish e.g. Ancient Greeks are just fine, so is Tim Berners-Lee.*

*Inventors are NOT allowed, unless you describe the science behind their inventions.*

*Your intended audience is other FoIT students. Do NOT talk about science that they will not be able to understand, still less science that you do not understand (this will preclude most 20th century science).*

Feedback on talks and posters

I am not giving individual feedback on this one since it will take too long to print and many of you didn't follow the instructions for 2 A4 pages, but did one A3 page which I cannot print and write comments on. Also some of the colours don't print correctly anyway.

So please read all the comments below and decide which apply to your work (if any).

Content

Be original in your choice of scientist.

Describe properly one contribution rather than just a quick skate over a list.

You must understand the science or maths that you are speaking about.

A poster is not an excuse to 'dumb down' the content. You were required to describe the science, so for example, you needed to derive the golden ratio and not just state what it is. Many posters were too descriptive.

Use equations to communicate where appropriate - they are the language of science after all. So the posters should have had properly displayed equations on them.

Naturally you should include references - about 2 or 3 would suffice.

Copied graphics need a credit in the caption - otherwise this is not only plagiarism, but also copyright infringement.

If you are asked for a Word doc or docx, then submit a Word doc or docx!

Graphic design

Good graphic design is essential for a talk and a poster. Long blocks of text should be avoided since they will not be read. A few people wrote a report rather than designed a poster.

The name of the scientist should be the first thing that your eye sees.

Check your design works on the University version of Powerpoint - a few had blocks of text or pictures overlapping.

Contrast background and foreground colours (remember some readers will be colour blind). Background should be pastel colours, font colours should be strong and logical (e.g. same colour linking related topics). Avoid black backgrounds - it takes a lot of ink to print these! Using a picture as the poster background usually makes the poster too 'busy' to read.

Quite a lot of you did a third page (often of references). These needed to be on the two pages themselves.

[***Confidence log***](https://blackboard.brunel.ac.uk/webapps/assignment/uploadAssignment?content_id=_380248_1&course_id=_12181_1&assign_group_id=&mode=cpview)

*The task here is to display your confidence in each of your current modules on a skill-by-skill basis. Set up separate tables (one per page for each module) with each row specifying a skill or technique. So for example for Discrete Maths it might say:*

* + *Change of base e.g. base 10 to base 3*
  + *Change of base between binary/octal/hexadecimal*
  + *etc*

*You should then assign a traffic light (red=not confident, amber=neutral, green=confident) to each skill.*

*The point of this exercise is for you to specify what skills have been involved so far. Knowing what's red or amber will show you where to spend more effort and/or seek help.*

*Submit as a Word doc with YOUR FIRST NAME & SURNAME in the header. 10 marks.*

Feedback on confidence log

There was some excellent work here, but also some of you simply avoided the task or took the easy way out by:

listing everything in the syllabus. These are TOPICS not SKILLS or TECHNIQUES. For example, binary arithmetic is a topic comprising skills like conversion to/from decimals, addition, multiplication, subtraction (using carries and complement) etc.

and/or listing the tasks that you did without reflecting on what skills you used or learned in the process. For example, doing the confidence log is not a skill in itself, but did involve identifying key skills for each module from your lecture notes, reflection on your abilities in each, producing a clear table, following the instructions and making an attractive design with colour for clarity.

If you did either of the above, then your confidence log was not really very useful in formulating what you need to do next and how to plan your revision. This task will be repeated as a revision exercise, so, next time, take it seriously and put the effort in.

***Study Skills Questionnaire Assignment***

Set and marked by the FoIT Statistics lecturer, Sarah Summerbell.

*This assignment should be done in groups of three or four students. You should submit one interim and one final report per group. Ensure that the names of all group members are included on the report.*

*Think of an investigation that you would like to explore by means of a short questionnaire. Decide on the questions you would like to include in the questionnaire (a maximum of five). The questions should be formatted exactly as you would like them to appear on a questionnaire, using appropriate language and format. Remember to consider the type of data you would like to receive back as a result of the question and how you intend to analyse and present the data.*

*An example (not to be used): I might wish to investigate where FoIT students live during term-time so that I can better understand the impact of, for example, London Underground strikes or snowy road conditions. I might include questions concerning where students live, their mode of transport to campus and how long the journey takes.*

*As a pilot, choose 10 people you know (e.g. friends, family, students) and ask them to complete your questionnaire and give you feedback.*

*The task has two parts:*

1. *Write an interim report (a maximum of 2 pages). This should include:*

* *a description of the topic you have chosen to explore and what you are hoping to find out,*
* *a copy of your draft questions with the reasons for including them,*
* *a summary of whether and how you would change the questions as a result of your pilot.*

1. *A final report (a maximum of 5 pages) comprising:*

* *a description of the topic you have chosen to explore and what you are hoping to find out, noting any changes from your interim report above,*
* *a copy of your draft questions, noting any changes from your interim report above,*
* *you must manufacture a small volume of appropriate ‘pretend’ data (say 50 responses). This data should include some null-responses, anomalies and outliers. Use this data to illustrate your intentions regarding the analysis and presentation of the data. You must NOT actually run your questionnaire to collect real data (you would need Ethics Committee approval to do so). You can simply create this pretend data in a spreadsheet. State and justify how you have treated null-responses, anomalies and outliers,*
* *an analysis (i.e. summary statistics) and presentation of the results based on your pretend data. You must display your results appropriately on charts, graphs and tables (properly labelled and with a caption).*
* *a conclusion section: although your data is ‘pretend’ you should treat this as real and draw whatever conclusions you can from your data. You must be able to justify your conclusions, so make clear how you are able to draw them from your charts etc.*
* *an appendix in which you should justify your choices of analysis and display charts, graphs or tables.*

*The interim report must be submitted to BBL by midnight on 7th March as a Word document.*

*The final report must be submitted to BBL by midnight on 21st March as a Word document. You must also upload your spreadsheet of pretend data, properly labelled and including the charts you have copied and pasted into your Word report.*

Study Skills Questionnaire Assignment

Interim Report – General Feedback

1. This is only a short questionnaire. Don’t be too ambitious and keep your area of interest to something quite specific. For example, don’t try and investigate every resource on the campus (sports, catering, accommodation, teaching, etc.) – choose just one and concentrate on doing that one well.
2. After you have written your questions, re-read the introduction/aim of the questionnaire to check you have covered everything and that none of the questions are irrelevant. The topics you describe in the introductions should cover exactly the same ground as the questions. For example, if you want to compare exam grades of students who live on campus with those that don’t, you need to ask about the exam grades as well as whether they live on campus. Don’t ask another question about whether they smoke, unless you have said in the introductions you are interested in whether smoking affects exam grades.
3. Be precise about the population (who you are interested in getting the information about). For example, don’t just put ‘students’, specify whether you mean students at Brunel or students in England or all students in the world or primary school students etc.
4. A sample is not the same as the population. It is a carefully chosen subset of the population that you hope will be representative of the population. You were **not** asked to discuss the sample.
5. A pilot questionnaire is a ‘trial run’ from which you can establish whether any of your questions need to be improved because, for example, they were ambiguous, the range of tick boxes was inadequate, or they were confusing. Any answers you may have been given as part of the pilot did **not** need to be analysed. You do not need to do graphs etc. for the pilot questionnaire.

General Feedback

1. **Read the instructions!**

* Out of 26 groups that submitted a report, only 14 submitted the Excel data spreadsheet as per the instructions
* A significant number of groups failed to include nulls, anomalies and outliers.
* A significant number of groups had no appendix.

1. **Do not jump to false conclusions**

I shall illustrate this by means of a simple example:

|  |  |  |
| --- | --- | --- |
| Person | Male/Female? | Do you live on or off campus? |
| 1 | M | On |
| 2 | M | On |
| 3 | M | Off |
| 4 | M | Off |
| 5 | M | Off |
| 6 | M | Off |
| 7 | F | On |
| 8 | F | On |
| 9 | F | On |
| 10 | F | On |

These two statements are true:

The majority of students are male (60%)

The majority of students live on campus (60%)

This does **not** mean that the majority of students are male and live on campus.

This does **not** mean that the majority of male students live on campus.

You need to look at the data in more detail:

|  |  |  |  |
| --- | --- | --- | --- |
|  | On | Off | Total |
| Males | 2 | 4 | 6 |
| Females | 4 | 0 | 4 |
| Total | 6 | 4 | 10 |

From this table you can see that only 20% of students are male and live on-campus.

Only a third (2 of 6) of the male students live on campus.

Most groups didn’t bother to manufacture their data at the individual level, but only at a summary level for each question. This meant you could do no analysis on the links between questions.

1. **Do not mix up the results and your own opinions**

Consider the following two statements:

1. Students prefer to shop off campus because it is cheaper.
2. Students prefer to shop off campus**. I think this is** because it is cheaper.

If you haven’t done any analysis on the reasons why students choose where to shop, do not include it in your report. If you want to give supposed reasons, then make it clear that this is your opinion, not part of the findings i.e. use statement b).

1. **Use the material you have learnt throughout the year**
2. Many groups collected numerical data (hooray!). However, only one group calculated an average. No groups calculated the standard deviation or indeed any other measure of dispersion. In the first semester we looked at several ways to consider the ‘shape’ of the distribution:

* Graphically e.g. a histogram, box plot, frequency polygon
* Compare mean, median and mode
* Using quartiles or standard deviation

This should determine which average and which measure of dispersion to use in your report. These values could also be used to make comparisons between different categories e.g. students living on campus spent an average of 4.5 hours a week playing sport, whereas students living off campus only spent 3.8 hours.

1. If you want to know if there is a correlation between two variables, calculate the correlation coefficient. It is very quick to do in Excel! Don’t just guess or assume. Several groups said they had found correlation, but no group made any attempt to calculate anything to confirm this.

Also note: in a statistical report (such as the ones you were writing) correlation is only to be used when looking for a relationship between two numerical variables. Use the word **association** otherwise.

1. An outlier is a piece of data that lies outside the main body of data. We have looked at methods of determining what constitutes ‘the main body’ using the inter-quartile range or standard deviation. Only one group attempted to do this.
2. **Do not put all the data in the report**

The report only needed to contain a summary of the results in an appropriate format, such as a summary table, graph or summarised with averages, standard deviation etc. You should not include all the data – that should be in an appendix, or better still, attached separately as instructed in an Excel spreadsheet.