Chemistry careers in SMEs (CCiSME)

A context/problem-based learning (C/PBL) resource

Staff handbook

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Produced for the Royal Society of Chemistry

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Introduction
During this project, the students will explore working for a small to medium sized enterprise (SME) in the Chemical and Allied Industries. The students will see that a growing number of graduates (including chemists) will work for an SME at some point during their working life. This provides the students with a great opportunity to consider careers within the SME chemical sector; an option often overlooked by students who have tended to set their sights on big pharma and other blue chip companies. The students will also have access to videos from people working in SMEs to give the students more insight into SMEs as a career option.

This project will help the students to explore the challenges that face SMEs in particular, as well as the benefits of working for an SME. The students will be undertaking a problem based activity that is set in the context of an SME.

The students will be working as a group and they will be expected to come up with a solution to the problem that has been set. The assessment is designed to look for evidence of good teamwork (via the minutes), and their ability to communicate their findings effectively.

Learning outcomes
By the end of this module, the students will be better able to

- Identify the pressures and opportunities facing SMEs in the chemical and allied industries
- Research and present information on SMEs
- Describe the nature of work for people working in SMEs
- Give an account of the benefits and challenges of working for an SME
- Work as a team on a project and understand their own role in the team
- Present information clearly and succinctly
- Demonstrate knowledge of the skills that might be required for working in an SME and evaluate these against their own skills set.

Course structure
This structure has been designed assuming that there will be a one hour session each week for 11 weeks. If there are two one hour sessions per week, then the workshops for working on the project will still need to be separated by a week, but the other sessions could be doubled up. Equally, the project sessions could be interspersed into a careers module, as set out in appendix 10.

Session 1 – Introduction to SMEs (PowerPoint 1)

The aim of this session is to introduce students to the nature of SMEs, the role they play in the economy, and particularly the nature of SMEs in the Chemical sector. The key point is that more people work for SMEs than large organisations, but they are generally less visible so not an obvious place for graduates (and those seeking placements) to look.

Session 2 – Introduction to the project

This session should be aimed at briefing students to identify an SME to base their project upon. They are shown a range of SMEs that are in the Chemical and Allied Industries. As a group, they need to agree on a type of company that interests them. They should explain the nature of the assessment, and that it is important to identify the company early on, and get to know about it. Questions that they need to address are:

- What type of company is it? Micro, Small or Medium.
- Location? This may influence the opportunities that they choose to take up.
- Nature of the business? R & D, contract research, manufacturer, novel materials, raw materials, agent, analytical services, consultancy services, etc. Any will work for the opportunities presented, so encourage them to choose something that interests them.
- What products or services are they selling?
- Who are their customers? They will all be business to business but what type of customers do they typically sell to.

Most of this information should be available through the company website. The students should not be recommended to contact the business, but equally, if they choose to do so then it shouldn’t be discouraged. You might want to warn them that they shouldn’t rely on getting a reply from a company.

It would be a good idea to ask the team to articulate why they have selected their chosen company.

For the remainder of the module, the students should imagine that they are working for the company that they have chosen.

Session 3 – IP and funding opportunities (PowerPoint 2)

The aim of this session is to give students some insight into the types of opportunities that SMEs might want to engage with. It will also highlight some of the challenges that SMEs face. During the session, you should encourage the students to think about the opportunities in the context of the SMEs that they are considering for their project.

Session 4 – Workshop for finalising their SME choice

Show videos on experience of working in an SME.

After this session, and some time before the next (to be determined by the tutor), students need to submit their choice of company, with details set out in the mark sheet, to the tutor (note: this might be summative or formative, but needs submitting so that they “lock down” their choice before receiving the emails).

Session 5 – Introduction to project management (PowerPoint 3)

There are two reasons for introducing project management – one is to provide some useful tools for students to use during this project, and the second is to introduce students to some of the terminology that is used in business.

Guidance on taking minutes at meetings – this is included in the student handbook. It is not necessary to spend time discussing this, but emphasise the need for students to read the section and apply the methods to their own minute taking.

Introduction to the email scenarios – Explain to students the practicalities of sending the emails to them. You will need to decide if all groups will receive the same emails, or whether you will send them random selections. You do not need to consider whether the emails are relevant for the students’ chosen companies. Deciding relevance is part of the task for the students. It is recommended that the students should be sent approximately 10 – 15 emails throughout the module.

Session 6 – Workshop for working on the project[1]

2 – 3 new emails to be sent prior to the workshop

Session 7 – Workshop for working on the project[1]

2 – 3 new emails to be sent prior to the workshop

Session 8 – Workshop for working on the project[1]

2 – 3 new emails to be sent prior to the workshop

Session 9 – Workshop for working on the project[1]

2 – 3 new emails to be sent prior to the workshop

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[1] These sessions may be facilitated by tutors or may require the students to meet as a group to work in their own time. This resource has been designed for first year students. You might want to think about their level of preparedness to work completely independently on these tasks. Equally, they could take part in tutorial groups. It is important to emphasise the need for students to take notes. There should be a minimum of 5 sets of minutes for the project.

Session 10 – Skills and individual reflection assignment (PowerPoint 4)
Class discussion on skills required for working in an SME. (see appendix 7)

Presentation and discussion on the individual reflective assignment

Session 11 – Student presentations
To be assessed by the tutor. You will need to consider if all the students will be present for the whole session, or whether you want to run “appointments” so that they don’t see each other’s. If they will all be present you should consider peer marking of the presentation. This wouldn’t necessarily contribute to the mark, but the feedback they give each other will be very helpful.

The project brief
Students should be organised into groups of 3 – 5 students for the project (to be defined by the tutor, dependant on the number of students on the course and whether you want to make use of any pre-existing tutorial groups). There are three components to this project.

Choosing an SME in the chemical sector
Each group will need to choose a SME in the chemical sector to base their study upon. The best approach is to use an existing company. The students will need to research this company.

- Where are they based and how big are they?
- What type of business are they? Research and Development, contract research, manufacturing, chemical services (eg. testing, analysis), consultancy services, etc.
- What are they selling?
- Who are their customers?

This exercise will need to be completed by the end of week 3 of the module.

Emails
The students will be given a number of emails to consider. Each group will be initially given 5 – 10 emails. Each email is typical of the types of emails that a company may receive. They all represent opportunities or services that might be useful to their business.

The students should imagine that they are employed by the SME they have chosen. They need to appraise each email as a group. They must decide if the email should be considered further, or discarded. The students must document their decision making. A good way to do this is to minute their discussions. Guidance on minute taking is included in the guidance section of this booklet.

For each opportunity that the group decides to investigate further, they must decide how they will take it forward, and what allocation of time is needed to pursue it. In any business, but in SMEs in particular, the time taken to pursue an opportunity or undertake a task must be carefully considered. In SMEs, staff resources as well as funding can be very limited, and pursuing new opportunities will need to be balanced with delivering the core business of the company. Students will need to justify the investment of time and/or money for the opportunities that they choose to pursue.

In subsequent weeks, the students will be sent additional emails, which they will have to also consider. It is quite possible that the later emails may alter their initial plans, and they will have to rethink their decisions. This dynamic model is very typical of a real business situation. The environment will be constantly changing, with new opportunities and threats appearing all of the time.

To allow for creativity within this module the students may also find their own opportunities for their business, although this is not an expectation of the project.

The final part of this task will be to present the opportunity or opportunities that the students identify as most beneficial to their business.

The students should present this opportunity to their boss/CEO with its justification in a memo.*

The students should present this opportunity to their boss/CEO (the tutor) in a meeting (as an informal presentation).*

(* delete as appropriate)

Individual reflection

At the end of the module the students will be asked to reflect on the skills that they have developed during the project, and from their wider experiences, and how these may fit with the skills needed to be successful in an SME.

Assessment

There is no final examination associated with this module, all the marks come from four pieces of coursework: the description of the company, the minutes from their meetings, their final memo/presentation* and the reflective summary. The first three components will be staff marked as a team contribution i.e. all members of the team will get the same mark. However, that team mark will be modified by the peer assessment (PA) score (which is a reflection of their contribution to the group effort) to give an individual mark for each student. (See the group work section and appendix 9 to see how the PA score is derived).

The reflective summary is an individual piece of work, to be marked by the tutor.

Overall, the assessment for this 5 credit project will be as follows (the first three components will be assessed as a group submission but the marks will be modified by the peer assessment score):

- Description of the company selected: 20%
- Complete and coherent minutes from meetings: 40%
- Presentation/memo* for chosen opportunity: 20%
- Reflection on skills: 20%

(* delete as appropriate)

Selection of a company (weighting 20%)
Each student group will need to choose a company to base their scenario upon. They will be assessed against the following criteria: Appropriate company selected, description of the business and understanding of their product(s)

Minutes (weighting 40%)
The minutes should be a record of all of the work that their group has undertaken in arriving at the final decision for their project. The minutes from the meetings of each of the sessions should include.

- The main points of their discussions and their decisions.
- Any actions, and who is responsible for the actions.
- A section dedicated to the follow up of the actions set in the previous minutes.

All issues raised by the minutes must be discussed and resolved.

The criteria against which the minutes will be assessed are given in appendix 2.

Presentation (weighting 20%)*
As a group, the students will be given 10 minutes to present their decision with justification to the module leader, who will be assuming the role of company CEO for this particular task. There will be additional time for the assessor to ask questions. The assessment sheet the marker uses, including an explanation of the marking criteria is given in appendix 3.

Memo (weighting 20%)*
As a group, they will need to submit a one page memo, to present their decision with justification to the module leader, who will be assuming the role of company CEO for this particular task. The memo should succinctly describe the opportunity they are proposing with a full justification of the benefits to the business. The assessment sheet the marker uses, including an explanation of the marking criteria is shown in appendix 4.

(* delete as appropriate)

Individual reflection (weighting 20%)

As well as the group elements to this project the students are also asked to reflect individually on their skills. We would like the students to consider, as a result of their experience with the project, what skills are needed to work within an SME (and how this might compare to a larger organisation). The students should then reflect on their own skills (both from working on this project, and their wider experiences) and comment on whether they believe an SME might be a suitable working environment for them, at this stage.

Guidelines to students for selecting a company

Students should be given guidance on selecting a company. There are a wide range of options available to them. You should ask them to consider firstly what type of company they wish to base their study upon; broadly, manufacturing, analysis or consultancy. Any of these options would work for the project.

It is advisable that they work on a real company that has a comprehensive website. This will give them access to the information that they need to complete the tasks.

Emails for the project

Once students have chosen a company to base their scenario upon, they can start on the email task. They should have already submitted a summary about the company they have chosen, with a brief description for assessment. One reason for doing this is to ensure that they don't decide to change company once they start to read the emails that they are meant to evaluate against the backdrop of the company that they have chosen.

Below is a framework for the emails that could be used to present the different opportunities to students – in a business setting. The premise is an email being sent to the students (acting as 'chair' of their companies) from their Business Development Manager, outlining a particular opportunity or service being offered to the company, which could potentially help to grow and expand their business. The students need to consider each email, and the opportunities within it. They must then decide whether to discard the message or investigate further (with justification for their decision). For those that are further investigated, a case should be made for those that are worthy of pursuing, with the anticipated benefit to the company being articulated.

Students may wish to use a SWOT analysis for each opportunity presented, in terms of the benefits to the company, the risks involved in taking up the opportunity, versus the benefit of not participating but the risks that this decision would entail.

The exercise can be largely considered as a cost-benefit analysis, and whilst many of the opportunities presented have no financial cost (at least not initially) it will be important for students to recognise the cost in terms of time, and how this can be a much greater factor in a smaller enterprise.

It is important to highlight that there is no wrong answer – provided that the student can show appropriate reasoning and explain how each of their decisions may impact upon their business.

It is proposed that a number of emails are sent out initially (up to half of them) and then further emails are 'drip fed' throughout the duration of the module. This better simulates a real situation, where employees have to consider the changing range of opportunities and the dynamic nature of a business environment. Students may find that the idea(s) they were initially pursuing get 'derailed' because a better opportunity comes along later in the process. It is a useful exercise to ask the students to consider how they managed the changing environment, and upon reflection how they might manage the situation differently in the future.

Introduction for each email opportunity

> Dear Dr S.M.Enterprise,
>
> Please find below details I am forwarding on to you regarding potential opportunities for expansion and growth of the business:
>
> [Insert details/scenario here]
>
> If you need any further information then please do let me know,
>
> Sincerely,
>
> Ms. Johnson
>
> Business Development Manager
> SMEnterprise
> Units 1a – 1c
> Innovations Street
> United Kingdom
> Tel: 01234 602214

Please insert emails given below. The order can be randomised, and may be randomised differently for each team

Dear Dr Enterprise,

We would like to invite you along to our factory for a tour of our facilities and to showcase to you some of the products that we offer. We specialise in advanced analytical techniques and machinery and we believe we can improve the quality of your products by offering you the tools to analyse samples like never before.

The factory tour will last for approximately 6 hours and expenses will be covered.

We look forward to hearing from you,

Analytical Answers.

Dear Dr Enterprise,

Please find attached details of our first annual fine chemical synthesis symposium, which allows you to showcase your company to some of the biggest clients in the world. The event has a 2 day itinerary, culminating in 15 minute presentations from companies to show their portfolio and current projects.

If you would like to register for this event please do respond asap as there is limited space. The registration fee is £2500 in the form of a non-refundable deposit.

Many thanks in advance,

John Smith
SBDG (Society for Business Development and Growth)

Dear Dr Enterprise,

I am writing to you to inform you of the services we could provide for your company. We offer recruitment programs tailored for your business and can help find the best employees for you. Whether you need a new VP, an accounts manager or a cleaner, we can find the right person for the right job.

For more information, please come and speak to us in person at our head offices in Fakeswich, UK, to find out about the comprehensive range of packages we offer at competitive prices.

Sincerely,

John Doe
RecruitSearch4U

Dear Dr Enterprise,

The Business Growth Service, part of the Manufacturing Advisory Service can offer support to manufacturing businesses in the England. We have a team of dedicated business development managers who will work with your company to help your business to improve and grow.

We provide diagnostic analysis and a growth plan that's tailored to your business. We can also provide match funding, up to 50%, for some projects. Please visit our website to find out more www.greatbusiness.gov.uk/mas. We look forward to working with you to improve your business and help you to grow.

Yours sincerely

Alison Sterling
Business Development Manager

Dear Dr Enterprise,

Here at Market-Pro we offer third party market research to developing businesses to help you maximise your sales. Research has shown that effective market research can help drive sales by showing you which audiences to target and how to expand into growing market areas.

We offer extensive independent research at reasonable rates so that you can expand your business and expand your profits!

Call us on 0845 602214 to find out more information

Ms N Namely

Secretary
Market-Pro Marketing Solutions

Dear Dr Enterprise,

If you're trying to grow your business, then we can help make it happen. We know how competitive it can be out there, which is why our experienced business advisors can:

- Develop and expand your business plan and help you to set realistic, time-manageable and achievable targets.
- Advise you on infrastructure and how to get the best out of your key personnel.
- Discuss how best to meet your finance needs and help you find the funding that you need!

Contact Business Advisors Plus today to find out about our team of advisors and how you can get an exclusive FREE hour of advice,

M. Monk
B.A.P. (Business Advisors Plus)

Dear Dr Enterprise ,

We know that your sales department is an integral part of your business and that there is huge reward to be found for having a committed, motivated and knowledgeable team. That's why we offer some of the most comprehensive sales training in the UK. Our in-house training sessions can bring your team together, with exercises in team-building, presentation skills and customer relations.

No matter how great your products are, you need a top-notch team to sell them! Call us today on 08956 299 792

SalesTrainingInc

Dear Dr Enterprise,

Often overlooked by smaller businesses are the effects of implementing a CSR (Corporate Social Responsibility) policy. By engaging in green initiatives and activities within the local community, your business becomes a more attractive one, both to potential customers and potential employees. By building up a positive company image, you can guarantee excellent relationships with suppliers and a reputation that will stand for itself.

Our dedicated team of consultants can help you tailor your CSR policy to your business model – including everything from recycling and responsible waste management to sponsoring local events and raising money for chartered charities.

To book a consultation, please come into our offices and register.

Dr B Helper

CSRExperts

Dear Dr Enterprise,

Did you know that there is government funding available for companies that can meet unique public sector challenges?

Are you wizards of waste management? Can you transform us with technology?? Consider yourself fanatical about finance? Then there may be funding of up to £2 million available to you through a SBRI (Small Business Research Initiative) scheme.

These are competitive initiatives run by the government for small businesses with big ideas. Submit your business plan and apply for one of our funding opportunities now, or visit www.sbri.com/research to find out more.

Dept. of Innovation

GovUK

Dear Dr Enterprise,

Did you know that you can apply for a small business loan, from £1000 – £25000? If your business needs a small injection to make your dreams a reality, then we have the loan for you. Fixed term repayment rates and interest rates for the life of the loan and repayment terms between 10 months – 12 years.

Funds can be transferred on the same day the loan is agreed, and options are available to defer the first repayment for up to 6 months.

Pop in and speak to one of our customer service representatives today at one of over 500 branches across the UK.

Hendersons. Here to Help.

Hendersons National Bank

Dear Dr Enterprise

Protect yourself – today!

If you're a first-class business, then you need a first-class lawyer. Here at Patent-Pending UK, we can provide you with some of the most extensive legal protection, including:

- Patents and intellectual property protection
- Health and safety law and guidelines
- Employment law
- General legal advice and counsel

Call us today on 08953 314 159 for a free assessment so that we can help you get protected and get invested.

Ms S Sales
Patent-Pending Legal UK

Dear Dr Enterprise,

Do you want to give your business a competitive advantage? Do you want to build your professional network in the local region? The West and North Yorkshire chamber of commerce brings together and provides support to local businesses.

As a member of the West and North Yorkshire chamber of commerce you can take advantage of our own corporate social responsibility measuring and benchmarking tool 'raising the bar'.

Raising the bar is a free tool that businesses of all sizes from sole trader to large PLC can use to measure the positive impact they make in the four key areas of:

- Community
- Education
- Environment
- Economy

Why raise the bar in 2015?

Now in its third year raising the bar is a fantastic way to demonstrate how collectively the chambers' members help support the wider community.

The benefits for your business are multiple and include:

- Year round recognition of your achievements on the raising the bar website and the chamber magazine
- Staff engagement to help recruitment and retention
- Opportunity to attend our annual raising the bar awards
- Use raising the bar to help win contracts and secure preferred supplier status

http://www.raising-the-bar.org.uk/raising-the-bar-2015/

Join the Chamber today, so that you and your business can take advantage of all the support that we have to offer!

(Source: Leeds, York and North Yorkshire chamber of commerce, http://www.yourchamber.org.uk/)

Dear Dr Enterprise,

Did you know that HM Revenue and Customs can offer you tax relief for your investment in R and D?

From 1 April 2012, the tax relief on allowable R and D costs is 225% – that is, for each £100 of qualifying costs, your company or organisation could have the income on which corporation tax is paid reduced by an additional £125 on top of the £100 spent. Please visit our website for further details of how this scheme can benefit your business. https://www.gov.uk/corporation-tax-research-and-development-rd-relief.

We realise that tax relief is a complicated matter, and that's why at Research4Tax we pride ourselves on simplifying the process for you. We guarantee you success in your claim for a very low fee. Please contact us today to see how we can help you.

Yours sincerely,

Ian Wynn
Reseach4Tax Ltd

(Source HMRC https://www.gov.uk/corporation-tax-research-and-development-rd-relief)

Dear Dr Enterprise,

Have you heard about the patent box? The patent box enables companies to apply a lower rate of corporation tax to profits earned after 1 April 2013 from its patented inventions. The relief will be phased in from 1 April 2013 and the lower rate of corporation tax to be applied will be 10%. See https://www.gov.uk/corporation-tax-the-patent-box for details.

At Suttondale Partners, our tax advisers can help you to exploit this opportunity to reduce your tax burden. To find out if you are eligible, please contact our office today.

Making corporation tax work FOR you.

Yours sincerely,

Sam Jones
Tax consultant, Suttondale Partners

Dear Dr Enterprise,

Do you have an innovative idea or product that could give our armed forces a competitive advantage? Can you increase survivability or drive down costs in defence? If so, then take a look at our funding opportunities. The CDE has an open call for proof of concept funding for low TRL ideas. Please see our website for details. https://www.gov.uk/government/publications/cde-enduring-challenge-competition

Our next networking event is on [*Xth of month*] in London. Please join this free event to find out how we can help your business. Register your interest on our website.

We look forward to hearing from you.

Dear Dr Enterprise,

Are you working on cutting-edge chemistry-based technology in **healthcare, energy and sustainability or materials science**? Join our annual innovation competition for an opportunity to showcase your idea and receive support from our industry experts.

We welcome ideas at any stage of development and from all across Europe. There is no cost to participate in the competition, and you will retain full control and ownership of your idea.

For competition details, please see http://www.rsc.org/competitions/emerging-tech/

There is a cash prize, and also mentoring to develop your idea into a commercial product. This could be the boost that your company needs to take it to the next level!

(Source: Royal Society of Chemistry www.rsc.org)

Dear Dr Enterprise

Are you looking for the latest research on the applications of analytical chemistry that can help your company? Here at Bruker we have brought together the latest applications of our techniques in a series of webinars that could help you gain competitive advantage.

Please take a look at what we can offer:
http://www.theresonance.com/2014/categories/academics/webinar-round-up

Please get in touch if you think that our techniques can help your business.

(Source: Bruker UK www.bruker.co.uk)

Dear Dr Enterprise,

Are you ready to be REACH compliant?

REACH is a European Union regulation concerning the registration, evaluation, authorisation and restriction of chemicals. REACH is extremely complex, and there is evidence to suggest that many small companies are unaware or unsure of their obligations under the regulation.

REACH one day workshops – are you ready?

The Royal Society of Chemistry is partnering with REACH Ready to provide two one-day workshops for small businesses. Register online today to join us in December http://www.rsc.org/events/detail/12207/reach-and-small-businesses-training and February.

Why is REACH important?

Substances manufactured or imported into the EU in volumes over one tonne need to be registered with the European Chemicals Agency by 1 June, 2018. As registration is a long process, it's best to start preparing for 2018 now!

Businesses that do not comply, or fail to comply with REACH on time, may be subject to penalties. This may include fines, and your business could lose market share during the time it takes to bring your product into compliance.

Your customers will expect you to know about REACH and be compliant. Companies that are seen not to be compliant by potential customers are likely to lose (or not win) business.

(Source: Royal Society of Chemistry www.rsc.org)

Dear Dr Enterprise,

Is your company ready to exhibit at Europe's leading chemical suppliers' exhibition?

http://www.chemspecevents.com/europe/

Over the past 30 years this trade conference and networking event has transformed into the must attend event for anyone in the chemical industry across Europe and beyond dedicated to the fine, custom and specialty chemicals industry.

To reserve your exhibition stand, please contact our sales team or see our exhibitor brochure: http://www.chemspecevents.com/europe/brochure

Advanced registration is free for visitors, please register at: http://www.chemspecevents.com/europe/registration

We hope to see you at Europe's leading chemical exhibition.

Kindest regards

Dear Dr Enterprise,

Here is a great opportunity for your business to benefit from funding to upskill your engineering workforce. This offer is open to any small or medium sized company that employ people in engineering occupations. Its aim is to help companies grow and become more productive through investing in the skills of its current and future engineers.

This is the third employer ownership engineering offer in response to Professor Perkins' review of engineering skills.

This funding opportunity is open to applications from 12 December 2014 to 27 February 2015. If you wish to apply you will need to register on the BIS e-Tendering portal first. Once you have registered you must then complete an application form. Read the attached guidance document before registering.

Yours sincerely,

Funding Manager
Department for Business Innovation and Skills

(Source: https://www.gov.uk/government/publications/employer-ownership-improving-engineering-careers-smaller-companies)

Dear Dr Enterprise,

Do you want the opportunity to sell your products to government? Do you need help in writing a procurement proposal?

We have over 30 years of experience in writing tenders to government, and we can help you to be successful too.

Please visit our website for further information.

https://www.enterprisenation.com/blog/posts/how-bid-writers-can-help-secure-government-contracts

We hope to hear from you soon, and help to give you a competitive advantage.

Yours sincerely,

Procurement Professionals.

(Source: https://www.enterprisenation.com)

Dear Dr Enterprise,

Meet the Experts!

Do you want the opportunity to meet with business experts who can help you to develop and grow your business? We have a range of workshops throughout the year. Please check out our latest expert workshops: https://www.enterprisenation.com/events/categories/expert-workshops

We hope to see you soon at one of our events. We can build better businesses together.

Yours sincerely,

Events manager
Enterprise Nation

(Source: https://www.enterprisenation.com)

KTN newsletter

Alongside the emails, you may also wish to disseminate the UK Knowledge Transfer Network (KTN) newsletter to students. This can be subscribed to using the link below.

http://bit.ly/1sHBypU

(Source: UK Knowledge Transfer Network: www.ktn-uk.org)

Guidance

This section contains the guidance that is included in the student handbook

Running meetings and taking minutes

Before a meeting, you should try to ensure that everyone is clear about the agenda (and objectives) for a meeting. Your team should agree on this each time. The items on the agenda should be numbered. The same numbering system should also be used in the minutes.

Minutes should be taken, detailing the activities and the outcomes of each session. It is almost impossible to record the meeting “word for word”. Therefore, it is a very useful skill to be able to pick out the important points and record them in a way that other people will be able to understand. The minutes have two major purposes: to record the substantive issues discussed (especially those agreed/approved) in the meeting and to provide a “things to do” list for the group.

When writing minutes, there are a number of rules that you should follow. It is important to avoid ambiguity; use specific details and avoid vague phrases such as, “as soon as possible.” When referring to additional documents ensure that a full reference is recorded, to allow the document to be easily located in the future. Use short, concise sentences and use the past tense. Any abbreviations that are used should be written in full the first time that they are used in each document. If there are a lot of common abbreviations it may be useful to produce a separate sheet of these abbreviations.

Action points should be clearly noted. Each action should be assigned to one or more of the team member(s). This will act as a reminder for what each member needs to do before the next session. As soon as you receive minutes and again prior to a meeting, you should read over the minutes of the previous meeting to remind yourself of what was discussed and also to check that you have carried out your action points (if not, try to do them asap if possible/appropriate).

If you are the chairperson you should make sure that the group keeps to the agenda (i.e. maintain the group’s focus). If the conversation starts to wander interrupt at a suitable point and bring the discussion back to the agenda item under consideration. If appropriate, the conversation can either be restarted in the correct agenda item, or under “any other business” at the end of the meeting; this should help to ensure that you cover all the agenda items and also make it simpler for the secretary to minute the meeting in a structured way. It is useful to summarise the key points at the end of each agenda item, to ensure that all members agree on the conclusion of each discussion. Also, the secretary will know what to minute from the discussion. At the end of each agenda item, the chair should ask the group members if they have anything else that they wish to discuss under each agenda item, before moving on to the next item. The chair should also try to ensure that all group members have a say in discussions and that any one individual does not unduly dominate a discussion or the meeting as a whole.

Each session should have a chair and a secretary. There are five sessions in all, so each member of your team will have an opportunity to play each role. If you, as a group, feel that it is appropriate, you can split a session into two or more meetings, each with separate minutes. The chair should ensure that the team sticks to the agenda, and that all the agenda items are discussed (unless the team agree to dismiss or hold it over to the next meeting). The minutes from the meetings will form part of the final assessment portfolio. This will be used to assess the ability of the group to execute tasks in a logical and timely manner, and also assess the ability to carry out and follow up on any actions generated. Minute taking is a valuable skill and your ability to take accurate and comprehensive minutes (but not containing waffle) will be assessed. Any group or sub-group meetings that take place outside of the five scheduled workshops should also be appropriately minuted/recorded.

Remember, the minutes should:

- Have a title
- Provide details such as: location, start time, end time, date, chair and secretary.
- List who was present and who was absent.
- Confirm the previous minutes as being an accurate and fair record (or note changes approved);
- Begin with matters arising from the minutes of the previous meeting.
- Provide a record of progress made with each action point.
- Provide an update on issues in minutes that are not going to be covered elsewhere in the agenda
- Provide a useful summary of the discussions that take place under each agenda item.
- List the decisions taken for future actions, who made the suggestions and show which individual(s) has/have been assigned to which tasks.
- Give the date of the next meeting.

Note, when a set of minutes have been finalised and approved they should be signed and dated by the chair (of the meeting considering them) on behalf of the team/committee. It is this signed copy that needs to be put into the final group assessment portfolio.

The requirement to produce team meeting minutes can serve several functions:

- It helps to keep the project on schedule, by providing a record of where you are up to in your work.
- It illustrates an important formal procedure, which you will come across in many workplace situations.
- It provides training in producing an informative, concise record of the key issues at a meeting. This is a highly valuable skill.
- It provides a formal structure for meetings, which may help to make them more efficient.
- It illustrates the method and effort made by a team which might not be reflected otherwise in their results.
- It provides a record of individual contributions that can act as a useful aid to assessment when assigning individual marks to a team effort.

An example (fictitious) set of minutes is outlined below. You should ensure that you use a logical numbering system. It is often useful to set the minutes out in a table.

Staff-student committee minutes

Applied Science Department

Monday 5th December 2012, 12:00 – 1:30pm
Present: AB (chair), CD (secretary), EF, AM, JK, SM.

1 Apologies

AH, MS

2 Previous minutes (meeting on Tuesday 4th October 2011)

The minutes of the previous meeting were approved and signed by the chair.

3 Matters arising from the minutes of the meeting held on 11 October 2011

3.1. Re 4.1: Induction programme for new first years – reps from the science library and ISS have both agreed to participate next year, still awaiting confirmation from Royal Society of Science. (Action: CD to chase up SM).
3.2. Re 4.4: completed.
3.3. Re 4.6: completed.
3.4. Re 5.7: a response was tabled and approved by the committee.
3.5. Re 6.8: confirmed.
3.6. Re 7.2: ongoing. (Action: AB).

4 Safety

4.1 Fumehoods (LB)

An audit of work carried out in the laboratories, which requires the use of a fumehood should be drafted. This could be used to assess the needs of the researchers and their possible relocation in the department or the purchase of fume-cupboards. *(Action: LB)*

The results of the review of fume-cupboard space in the department should be discussed at the departmental meeting. *(Action: CD to raise in staff meeting and AM to raise in safety committee meeting)*

4.2 Apparatus left unattended forms (EF and SM)

There are new forms that all staff and research students should now be using when apparatus / reactions are left unattended. These forms must be countersigned by the supervisor or nominated person. *(Action: CD to distribute forms and details of procedures to all concerned and include in postgraduate handbook)*

5 Modular course review, lectures, practicals and assessment

5.1 Lecture times (JK)

Some lecturers are over-running the timetabled lecture session. It would be appreciated if lecturers would keep to the timetabled slot. *(Action: JK raise at L and T meeting)*

5.2 Overhead projector in MLT (JK)

This is partly broken and is likely to need replacing. *(Action: AM to raise in L and T meeting)*

5.3 ASCI3000 (JW)
Students would like a wider choice of projects *(Action: AB to raise in L and T meeting)*

5.4 ASCI2001 (CD)
This is a 10 credit practical module. The amount of material for this module requires reviewing *(Action: JK to review with practical sub-group committee)*

6 Postgraduate matters

6.1 Thesis/report feedback
It would be useful to students and supervisors if an approximate deadline for reviewing theses/reports was discussed when work is submitted to the supervisor for comment. *(Action: AB to raise in staff meeting)*

If this idea is agreed, the matter should be included in the postgraduate handbook. *(Action: CD)*

7 Main library student user group

7.1 CD as student rep
There has been a meeting already but CD was unaware of it taking place. *(Action: CD to contact library and follow up as necessary)*

AM queried if CD was also involved with issues relevant to the science library. This would be useful since many references relevant to the applied science department are kept here. *(Action: CD)*

8 Any other business

8.1 Deadlines related to ASCI2001 coursework were not maintained for the applied science students. *(Action: AB to raise in L and T meeting)*

8.2 Computers
Four new computers are now available in the common room for students to use.

There have been occasions when students have been told to leave computer clusters due to timetabled teaching sessions. A review of the use of computer clusters by students should be carried out *(Action: CD to see SM)*

8.3 Common room
This area is welcomed by the students as a place to meet fellow members of the department. However, students are reminded to maintain this area tidy and rubbish free. *(Action: student reps to inform year groups)*

9 Date of next meeting
5th March 2012

Guidance: The presentation

Presentations – general

Throughout this module, and no doubt at other times during your degree, you will have undertaken various activities where you had to communicate verbally with your friends, classmates and tutors. Many students find presentations nerve wracking and so try to avoid them. Although giving a presentation may seem daunting, they do become easier with practice and they do develop skills useful for future employment eg the ability to plan, develop and communicate a theme. When they go well they can be an excellent confidence booster. As with most things it is essential that you plan well before giving a presentation and that you are familiar with the material. Below are some tips.

- Make sure you are clear about the purpose and length of the presentation and the target audience.
- Research topic thoroughly and allow sufficient time for preparation of the presentation
- Make sure the presentation is ordered logically into introduction main body of information and concluding remarks or summary
- Check the facilities available; for example if you need a projector with computer make sure you have access to these
- Practise presentation by giving it several times to an empty room or to friends; and them to listen and could teak the content and delivery
- Try recording your presentation and listening back to it. Are you talking too quickly, too slowly? Is their variation in your intonation?
- Make sure you maintain eye contact with your audience: never turn your back on them to deliver the presentation to the projector screen (a frequent mistake made by people who are nervous)
- Make sure your audience can hear you by speaking clearly and sufficiently loudly (in a large room a good tip is simply it ask people at the back if you can be heard)
- Deliver at a pace that is not too fast and not too slow (if you have rehearsed with an audience of friends and then they should have advised you on this). There is a temptation when nervous to speak too rapidly – if you have rehearsed well you should be able to overcome your nerves
- Never read out your presentation to your audience: this appears monotonous and reduces lack of eye contact (i.e. it stifles interaction with your audience)
- Make sure you know how to pronounce scientific terms before the presentation – this will add to your confidence
- If using PowerPoint slides, take advice from your tutor on font size and display options – do not be tempted wow your audience with your technical abilities at the expense of the actual content. Do not display too much information and never read from the slides, use them as a prompt only – the slides should complement the content of your talk
- At the end of the presentation thank your audience and asked them if they have any questions: thorough preparation should mean you are able to answer them.

[List taken from: Verran and Dawson (2011)]

Guidelines for this assessment

- Firstly don't panic. The assessor is there to see the extent to your knowledge not to trip you up or make you look bad.
- Don't get bogged down in the detail, the presentation needs to be a succinct. The questions will provide an opportunity for you to expand on areas
- Don't use PowerPoint – this is an information presentation. You can use handouts/diagrams/props if you think it is appropriate.

Guidance: Reflective writing

The ability to reflect on experiences is a valuable skill to master. It is useful in both learning from experiences for personal development, and in describing what contribution you have made to an activity, which is often a question that comes up at interview.

As scientists, we are used to recounting factual information, describing events, and drawing conclusions from our observations in a factual, analytical and descriptive way. However, this is not what is required to be able to reflect effectively. Reflection is a much more personal account of an event or experience, and requires the writer to consider not just what happened, but how they felt about what happened, what they have learned about themselves from the event, and furthermore, how this learning will help them in the future. In summary:

Reflective writing is.

- Your response to experiences, opinions, events or new information.
- Your response to thoughts and feelings about your experiences.
- A way of thinking to explore your learning.
- An opportunity to gain self-knowledge.
- A way to achieve clarity and better understanding of what you are learning.
- A chance to develop and reinforce writing skills.
- A way of making meaning out of what you study.

Reflective writing is not.

- Conveying information, instruction or argument.
- Pure description, though there may be descriptive elements.
- Straightforward decision or judgement (eg about whether something is right or wrong, good or bad).
- Simple problem-solving.
- A summary of course notes or a standard university essay.

Group work

The majority of work you do in this module will be done as part of a group. This is for a number of reasons; not least the only way to learn to work as part of the team (a key skill for employers) is to work as part of a group or team. Also when they work well, teams achieve results greater than the sum of the individuals.

Calculating each individual contribution to group work

To try and best reflect every individual's contribution to the team effort, the group mark for the progress log and project pitch will be multiplied by a peer assessment (PA) factor so that each student will get an individual mark for the coursework.

Individual student’s mark = Student’s PA score × Group mark

To calculate the PA scores at the end of the module you'll be asked to score yourself and your colleagues’ efforts using the criteria in the table below. (A worked example of how the numbers are used to calculate each PA score is given in appendix 9).

Table 1: Peer evaluation scores

Write the names of the other group members in the blank boxes on this row:	**You**				
Level of enthusiasm/participation					
Suggesting ideas					
Understanding what was required					
Helping the group to function well as a team					
Organising the group and ensuring things get done					
Performing tasks efficiently					

(For each criterion marks are awarded as follows: 4 for 'better than most of the group in this respect', 3 for 'about average for this group in this respect', 2 for 'not as good as most of the group in this respect', 1 for 'no help at all in this respect' and 0 for 'a hindrance to the group in this respect'

You will see that the criteria focus on a range of activities that help a team work effectively. This table should be used to genuinely reflect the range of contributions within a working team. Obviously a score of 0 can and should be given where deserved. However, for someone who has seriously hindered the function of the team, such as by persistent absence or obstructive behaviour (and so deserves a string of 0s) then this table should not be the first indication of that behaviour. That is, the team should use the yellow/red card system (described below) as soon as possible to highlight his or her lack of contribution to the module.

Appendices

Appendix 1: Company description assessment sheet

Group members:

Project title:

Module:

Description of the company	**Fail**	**Poor**	**OK**	**Good**	**Excellent**
Appropriate company selected	E	D	C	B	A
Description of the business	E	D	C	B	A
Understanding of their product(s)	E	D	C	B	A
Well-presented/good standard of writing	E	D	C	B	A

Comments:

To improve:

Overall grade/mark for company description:

Appendix 2: Minutes assessment sheet

Group members:

Project title:

Module:

	Fail	**Poor**	**OK**	**Good**	**Excellent**
Understanding of business	E	D	C	B	A
Coherent writing	E	D	C	B	A
Follow up on actions	E	D	C	B	A
Decision justified	E	D	C	B	A
Appropriate level of detail	Too little		OK		Too much

Comments:

To improve:

Overall grade/mark for minutes:

Appendix 3: Presentation assessment sheet

Group members:

Project title:

Module:

Presentation*	**Fail**	**Poor**	**OK**	**Good**	**Excellent**
Professionally delivered	E	D	C	B	A
Succinct	E	D	C	B	A
Well-presented argument	E	D	C	B	A
Appropriate decision for the business	E	D	C	B	A

Comments:

To improve:

Overall grade/mark for presentation:

(* use either appendix 3 or appendix 4 as required)

Appendix 4: Memo assessment sheet

Group members:

Project title:

Module:

One page memo*	**Fail**	**Poor**	**OK**	**Good**	**Excellent**
Professionally written	E	D	C	B	A
Succinctly written	E	D	C	B	A
Well-presented argument	E	D	C	B	A
Appropriate decision for the business	E	D	C	B	A

Comments:

To improve:

Overall grade/mark for memo:

(* use either appendix 3 or appendix 4 as required)

Appendix 5: Reflective summary assessment sheet

Name:

Student ID:

Project title:

Module:

Reflective summary	Fail	Poor	OK	Good	Excellent
Reflection on own skills development	E	D	C	B	A
Reflection on working in a team	E	D	C	B	A
Consideration of skills needed for SMEs	E	D	C	B	A
Reflection on impact on own career plans	E	D	C	B	A

Comments:

To improve:

Overall grade/mark for reflective summary:

Appendix 6: Marking criteria

Table 2: Company description

Mark	Appropriate company selected	Description of the business	Understanding their products	Well-presented/good standard of writing
A	Highly relevant decision. Very clear and well-articulated explanation of the decision	Excellent focus on topic. All content highly relevant	Clear evidence of extensive research. Excellent examples showing excellent understanding and insight	Excellent and professional use of language. No spelling or grammatical errors.
B	Good decision. Reason for the choice is well-articulated	Keeps a clear focus on the topic. All material relevant	Shows evidence of a range of relevant research. Supports points well with examples. Good understanding of the business.	Good use of language. Suitable professional tone, good grammar and spelling.
C	A relevant decision although the reason for the choice may not be well articulated.	Focuses on the topic Occasionally include some minor irrelevancies.	Shows evidence of some relevant research. Supports most points with examples. Limited understanding of the business.	Adequate use of language. i.e. Overall clear, though some minor errors in spelling or grammar.
D	Choice of company has limited scope	Some failure to focus on the topic at times. May have omitted some basic concepts or included unimportant areas. Is not always relevant	Shows evidence of limited research; Supports some points with examples but these may be badly chosen. Very limited ability to summarise	Poor standard of writing. Several spelling and grammatical errors.
E (Fail)	Poor decision. Company is of no relevance to the exercise	Has not addressed the subject matter of the presentation in any substantial way. The presentation contains much irrelevance.	The presenter shows minimal evidence of background reading. Points made in the presentation are unsupported. May be major errors of fact.	Extremely poor writing that affects understanding. i.e. many spelling/grammatical errors.

Table 3: Minutes

Mark	Understanding of business	Coherent writing	Decisions justified	Follow up on actions
A	Clear evidence of extensive research. Excellent examples showing excellent understanding and insight	Excellent and professional use of language. No spelling or grammatical errors.	Very clear and well-articulated explanation of the decisions.	Excellent continuity throughout the minutes with all actions clearly assigned and followed up.
B	Shows evidence of a range of relevant research. Supports points well with examples. Good understanding of the business.	Good use of language. Suitable professional tone, good grammar and spelling.	Reasons for the decisions made are well-articulated.	Good continuity throughout the minutes. Most actions assigned and followed up on.
C	Shows evidence of some relevant research. Supports most points with examples. Limited understanding of the business.	Adequate use of language. i.e. Overall clear, though some minor errors in spelling or grammar.	Relevant and sensible decision although the reason for the choices may not be well-articulated.	Mostly good continuity although some aspects neglected. Some actions followed up but not all.
D	Shows evidence of limited research; Supports some points with examples but these may be badly chosen. Very limited ability to summarise	Poor standard of writing. Several spelling and grammatical errors.	Not clear why decisions made are good for the business.	Minutes a bit sporadic with poor continuity. A few actions followed up, but not always clear and some not assigned
E (Fail)	No evidence of background reading. Points made in the presentation are unsupported. May be major errors of fact.	Extremely poor writing that affects understanding. i.e. many spelling/grammatical errors.	No explanation of the decisions made, or no decisions noted in the minutes.	Very poor set of minutes that don’t make sense to the reader. Lack of any actions assigned or followed up.

Table 4: Presentation

Mark	Succinct	Well-presented argument	Professional delivery	Appropriate decision for the business
A	Excellent focus on topic. All material highly relevant	Clear evidence of extensive research. Excellent examples explained with full justification of decisions made	Excellent and confident use of voice.	Highly relevant decision. Very clear and well- articulated links to the business and its future plans
B	Keeps a clear focus on the topic. All the material relevant	Shows evidence of a range of relevant research. Supports points well with examples. Good ability to express ideas in own words.	Good use of voice. Suitable volume for the environment.	Good decision for the business. Links to the business and its future plans are well articulated
C	Focuses on the topic. Occasionally include some minor irrelevancies.	Shows evidence of some relevant research. Supports most points with examples. Limited ability to summarise findings.	Adequate voice. i.e. Overall clear, though pace of verbal delivery and/or volume may be inappropriate.	A relevant decision for the business although the significance of the choice may not be well articulated.
D	Some failure to focus on the topic at times. May have omitted some basic concepts or included unimportant areas. Is not always relevant	Shows evidence of limited research; Supports some points in the presentation with examples but these may be badly chosen. Very limited ability to summarise.	Poor use of voice. Pace and volume of verbal delivery are unsuitable for the environment.	Decision is of limited value to the business.
E (Fail)	Has not addressed the subject matter of the presentation in any substantial way. The presentation contains much irrelevance.	The presenter shows minimal evidence of background reading. Points made in the presentation are unsupported. May be major errors of fact.	Extremely poor use of voice. i.e. Clarity and pace are totally inappropriate.	Poor decision for the business and lack of evidence for the decision making.

Table 5: Memo

Mark	Succinctly written	Well-presented argument	Professionally written	Appropriate decision for the business
A	Excellent focus on topic. All content highly relevant	Clear evidence of extensive research. Excellent examples explained with full justification of decisions made.	Excellent and professional use of language. No spelling or grammatical errors.	Highly relevant decision. Very clear and well-articulated links to the business and its future plans.
B	Keeps a clear focus on the topic. All material relevant	Shows evidence of a range of relevant research. Supports points well with examples. Good ability to express ideas in own words.	Good use of language. Suitable professional tone, good grammar and spelling.	Good decision for the business. Links to the business and its future plans are well-articulated.
C	Focuses on the topic Occasionally include some minor irrelevancies.	Shows evidence of some relevant research. Supports most points with examples. Limited ability to summarise findings.	Adequate use of language. i.e. Overall clear, though some minor errors in spelling or grammar.	A relevant decision for the business although the significance of the choice may not be well articulated.
D	Some failure to focus on the topic at times. May have omitted some basic concepts or included unimportant areas. Is not always relevant	Shows evidence of limited research; Supports some points with examples but these may be badly chosen. Very limited ability to summarise	Poor standard of writing. Several spelling and grammatical errors.	Decision is of limited value to the business.
E (Fail)	Has not addressed the subject matter of the presentation in any substantial way. The presentation contains much irrelevance.	The presenter shows minimal evidence of background reading. Points made in the presentation are unsupported. May be major errors of fact.	Extremely poor writing that affects understanding. i.e. many spelling/grammatical errors.	Poor decision for the business and lack of evidence for the decision making.

Table 6: Reflection

Mark	Reflection on own development	Reflection on contribution to team	Consideration of skills needed in SME	Consideration of own future career plans
A	Highly reflective account of own development through the course. Excellent examples throughout	Highly reflective account of own contribution to the team through the course. Excellent examples throughout	Extensive and very insightful consideration of the skills that are most relevant to SMEs.	Detailed consideration of own career thinking and how the module has impacted on the decision making process.
B	Good reflective account of own development throughout the course Good examples used to illustrate the point	Highly reflective account of own contribution to the team through the course. Excellent examples throughout	Thorough and insightful consideration of the skills that are most relevant to SMEs.	Consideration of own career thinking and how the module has impacted on the decision making process.
C	Good reflection of own development in places, but also quite descriptive. Some examples given	Good reflection in places of contribution to the team, but also quite descriptive. Some examples given.	Good consideration of the skills that are most relevant to SMEs.	Limited consideration of own career thinking and how the module has impacted on the decision making process.
D	Mostly descriptive account of own experiences. Very limited examples, or irrelevant for the point made.	Mostly descriptive account of contribution to the team. Very limited examples, or irrelevant for the point made.	Very limited attempt to consider relevant skills for SMEs.	Very little consideration of own career thinking and no reference to the module.
E (Fail)	Very poor account. Conveys little or no useful information No examples given.	Very poor account. Conveys little or no useful information. No examples given.	No consideration of skills required.	No consideration of own career thinking.

Appendix 7: Initial skills audit – start of project

Adapted with permission from University of Leeds (Chemistry: Idea to Market; S Maw, P McGowan and S Pugh) and University of Birmingham (Mathematics in Industry; M Grove)

Please complete this audit on your own. Try not to over analyse but give your immediate feeling of how experienced you feel in each of these skill areas, how able you are (i.e. how well you perform these tasks) and how confident you feel when doing these activities. It is important you give brief (bullet point) examples of activities you have undertaken for each skill if you are able to do so.

Table 7: Initial skills audit

Skill	Brief description	Score (1 – 5)			Notes and example activities
		Experience	Ability	Confidence	
Teamwork	Be able to work as part of a team by making meaningful contribution to a collective task				
Communication & persuasion	Persuade others, using a variety of approaches, through informed opinion and negotiate support for ideas				
Decision making	Evaluate issues and make decisions in situations of ambiguity, uncertainty and risk				
(Verbal) presentation	The ability to communicate ideas and arguments effectively verbally, using approaches tailored to the needs of different audiences.				
Written (presentation)	The ability to communicate ideas effectively in writing, using approaches tailored to the needs of different audiences.				
Project planning	Take responsibility in project planning and in the management of tasks and activities.				

Skill	**Brief description**	**Score (1 – 5)**			**Notes and example activities**
Time management	The ability to work in an efficient, effective and flexible manner to prioritise and complete a range of tasks.				
Finding information	Collect, evaluate and interpret information from a variety of sources; present findings objectively and concisely recognising any limitations.				
Perseverance	Demonstrate perseverance, resilience and determination to achieve goals, especially within challenging or complex situations.				
Independence	The ability to work and learn independently, using self-reflection to critique individual performance.				

Appendix 8: Group work – evaluating the contribution from each group member

Please complete the table below assigning a value for each criterion for each person using the guidance below. The figures you give will be used to calculate the peer assessment factor as outlined in the module handbook.

Table 8: Peer evaluation scores

Write the names of the other group members in the blank boxes on this row:	**You**				
Level of enthusiasm/participation					
Suggesting ideas					
Understanding what was required					
Helping the group to function well as a team					
Organising the group and ensuring things get done					
Performing tasks efficiently					

For each criterion marks are awarded as follows:

4 for 'better than most of the group in this respect'

3 for 'about average for this group in this respect'

2 for 'not as good as most of the group in this respect'

1 for 'no help at all in this respect'

0 for 'a hindrance to the group in this respect’

Appendix 9: Details of how the peer assessment score is calculated

The calculation is based around the allocation of a group mark for the work produced by the group (in this case for the project pitch) and the manipulation of this group mark to derive a mark for each individual within the group. The formula adopted is as follows

Equation 1: Individual student's mark = Student's PA score × Group mark

Where PA stands for Peer Assessment.

The PA score is obtained by asking students to access each other's contributions via a peer assessment form. Each individual's scores are then added up to give an individual PA total. This is then divided by the average PA total for the group to give the individual's PA Score.

Equation 2: PA Score = $\frac{Individual\ PA\ total}{Average\ PA\ total}$

The PA score reflects the individual's comparison with the other members of the group.

A worked example

Three students, Angela, Julie and Thomas, worked in a group and received a group mark of 60%. The PA self-assessment results are summarised below:

In row 2 of the table: A= Angela, J = Julie and T = Thomas

Table 9: A worked example of peer evaluation scores

Marks awarded to:	**Angela**			**Julie**			**Thomas**		
Marks awarded by:	**A**	**J**	**T**	**A**	**J**	**T**	**A**	**J**	**T**
Level of enthusiasm/participation	2	3	2	1	1	1	2	2	2
Suggesting ideas	2	3	1	1	1	2	2	2	2
Understanding what was required	2	2	2	0	2	1	2	2	3
Helping the group to function well as a team	2	1	2	1	1	2	1	2	2
Organising the group and ensuring things get done	2	3	3	1	1	1	2	2	2
Performing tasks efficiently	2	3	2	1	2	1	2	2	2
Totals			39			21			36

$$Average\ PA\ score\ = \frac{(39\ +\ 21\ +\ 36)}{3} = 32$$

Applying equation 2 for each student reflects each individual's effort in comparison to the rest of the group. A PA score >1 is above average, <1 is below average.

$$Angela's\ PA\ score\ = \frac{39}{32} = 1.22$$

$$Julie's\ PA\ score = \frac{21}{32} = 0.66$$

$$Thomas'\ PA\ score = \frac{36}{32} = 1.13$$

Applying equation 1 is the final step which adjusts the group mark by the student's PA score:

Angela: 1.22 x 60% = 73.2%

Julie: 0.66 x 60% = 39.6%

Thomas: 1.13 x 60% = 67.8%

[Taken from Lejk et al., (1996)]

Appendix 10: Description of a possible “careers for chemists” module

Overview

This document provides the details of a 10 credit first year ‘careers for chemists’ module, based on the experience of delivering such a module at the University of Leeds. Such a module would provide a good context for this SME resource.

It is strongly recommended that such a module be developed as a partnership between the chemistry department and the university’s careers centre. Experience has shown that this module would be best suited to semester 2 of year one.

Module description

The course provides a framework to help students to maximise the career development opportunities available to them during their degree.

The module consists of a series of workshops that will introduce a number of useful tools and resources available to students to help them develop their career thinking. In addition, a number of sessions will include talks from employers relevant to the chemical sector, with a particular focus on the skills that employers look for in new recruits.

It can be helpful to focus on applying for a year in industry within such a module, as students in year one often consider graduate jobs as a long distance into the future.

Module learning outcomes

By the end of the module, students will be better able to.

- Demonstrate an awareness of their skills, interests, and personal characteristics.
- Access the opportunities for skills development available to them whilst at university.
- Recognise the opportunities to develop work-related skills and gain work experience, and the associated application processes.
- Apply for graduate vacancies, having developed a CV and covering letter.
- Work in an effective group, and evaluate their own performance within a group setting.
- Demonstrate practical techniques for interviews, presentations and group work.
- Articulate their commercial awareness.
- Articulate their transferrable skills, and also be able to identify areas to develop.
- Make good use of the careers centre and the support available.

Course structure

The course is delivered through a range of interactive workshops, assignments and a group project.

Workshops

1. Introduction to the module

- Objectives and expectations
- Group allocations and ice breaker activity
- Overview of the assignments

2. Introduction to the group project

- See resource for details
- Researching an employer/company

3. Work experience

- Benefits
- Opportunities available
- Deadline for deciding on a company to use for the assignment

4. Study week for project

- First batch of emails distributed to students
- Group session to discuss the emails

5. Employer session
6. CV writing workshop
7. Social media for careers
8. Study week for project
9. Employer session
10. Interview skills practice session
11. Project presentations
12. Deadline for handing in coursework

This is a typical schedule – it will be important to allow at least a couple of scheduled sessions for the project. Students should be meeting up at least once per week to work on the project in their own time.

Appendix 11: List of useful references

The European entrepreneur exchange programme
http://bit.ly/21o2J4U

European Union support programme for SMEs
http://bit.ly/1KHhOuA

Evaluation of the SME definition
http://bit.ly/1KHhOuA

From ideas to growth: Helping SMEs get value from their intellectual property – Conclusions
http://bit.ly/1TwYDVq

EU Marco Polo initiative
http://bit.ly/1FAZJpG

Licencing IP
http://bit.ly/21o3jjd

REACH: The basics
http://bit.ly/1Q97Bnx

The new SME definition
http://bit.ly/1fQB9Zu

Appendix 12: WebPA

The online Peer Assessment tool, WebPA can be used effectively for this purpose.

If you want more info on WebPA itself, the WebPA homepage is a good place to start (http://webpaproject.lboro.ac.uk/).

Alternative tools include Sparkplus (http://spark.uts.edu.au) or CATME(http://info.catme.org).

Details are provided here on how to use WebPA.

WebPA – Basic instructions for staff

Notes kindly provided by Christopher Pask, University of Leeds

Note: These instructions are written for an administrator account, and some sections won't be applicable for general staff or student accounts.

You will need to ask your University webmaster to set up an account for you on the server.

As WebPA is hosted locally, it is not linked to the central computing service and has no link to the VLE or any other central system. This means everything has to be setup manually – module details, student and staff details, passwords etc. This is fairly easy to do; it will just take a little time to setup.

[Note: it is technically possible for WebPA to be integrated into some virtual learning environments, but this would need to be arranged locally].

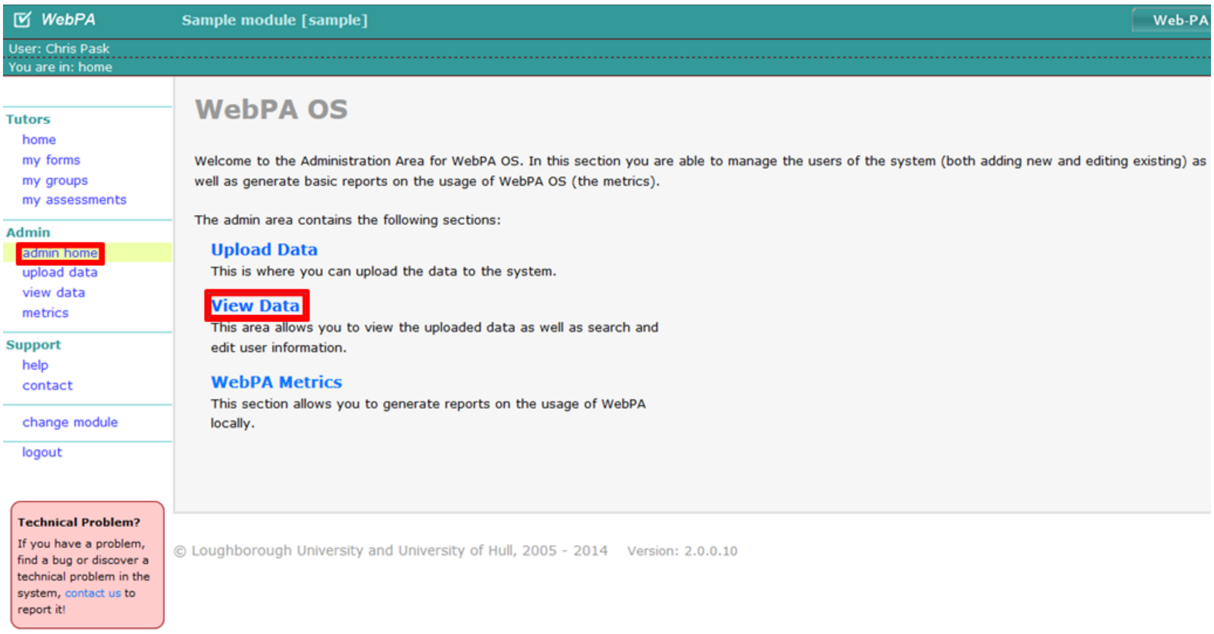
Logging In

You need to be logged onto a University computer in order to log onto WebPA. It is not currently possible to log on through a Wi-Fi connection or through Desktop Anywhere.

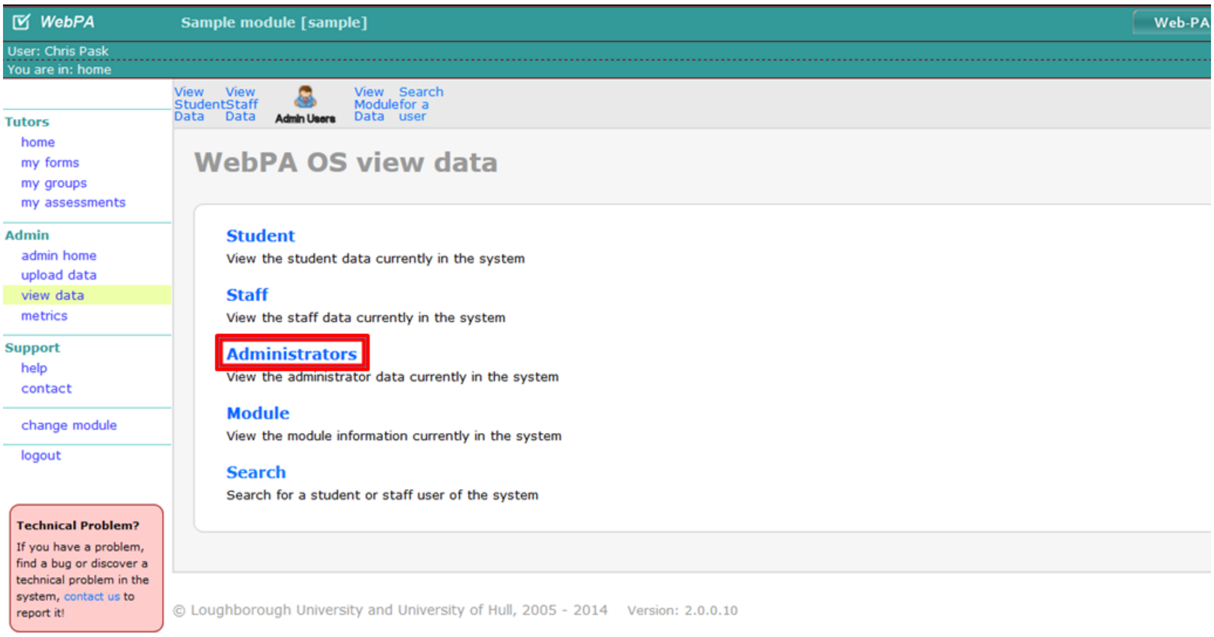
Enter username and password

Changing Password

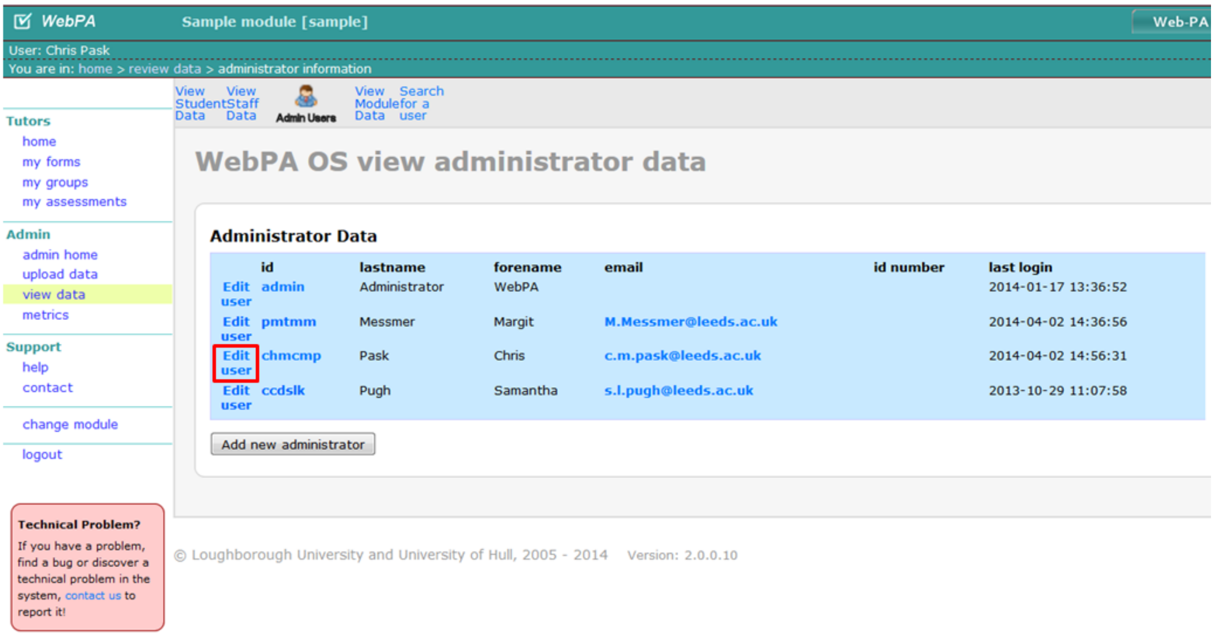
Click on "admin home" then "view data"



Click “administrators”.



Select user then click “edit user”.

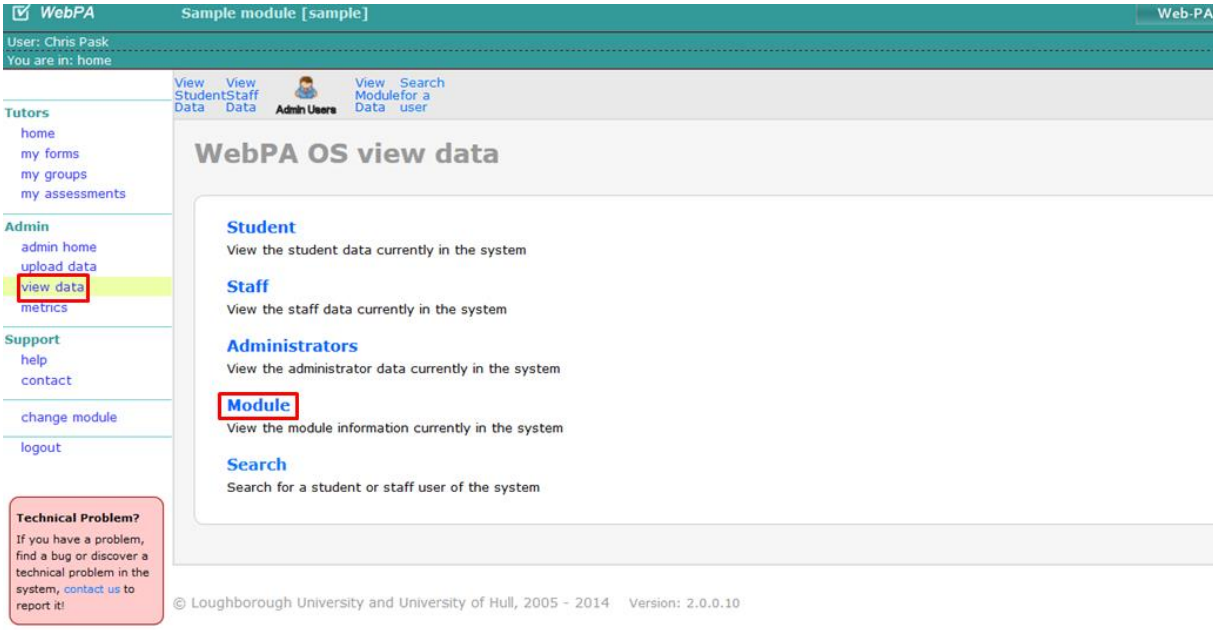


All login details of the user may then be changed.

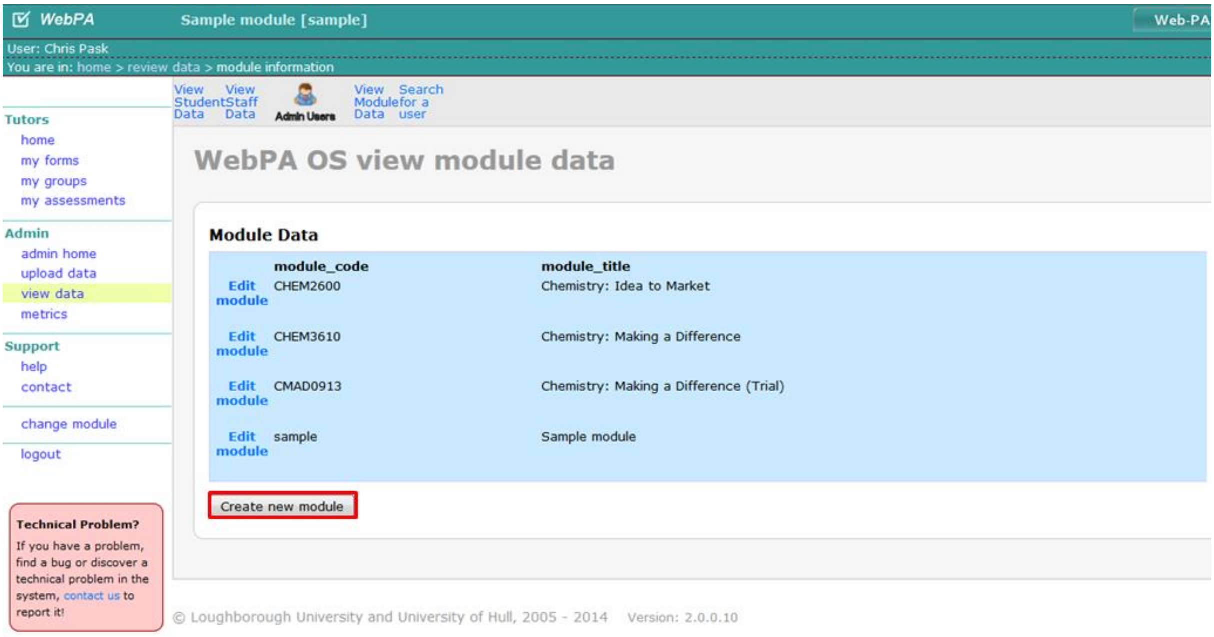
Note: This is how you change an administrator password. To change staff and student passwords just select “Staff” or “Student” from the “View Data” window. Staff and student users of the system cannot change their own password. Also, as the system is not linked to ISS, usual University login does not work.

Setup a new module

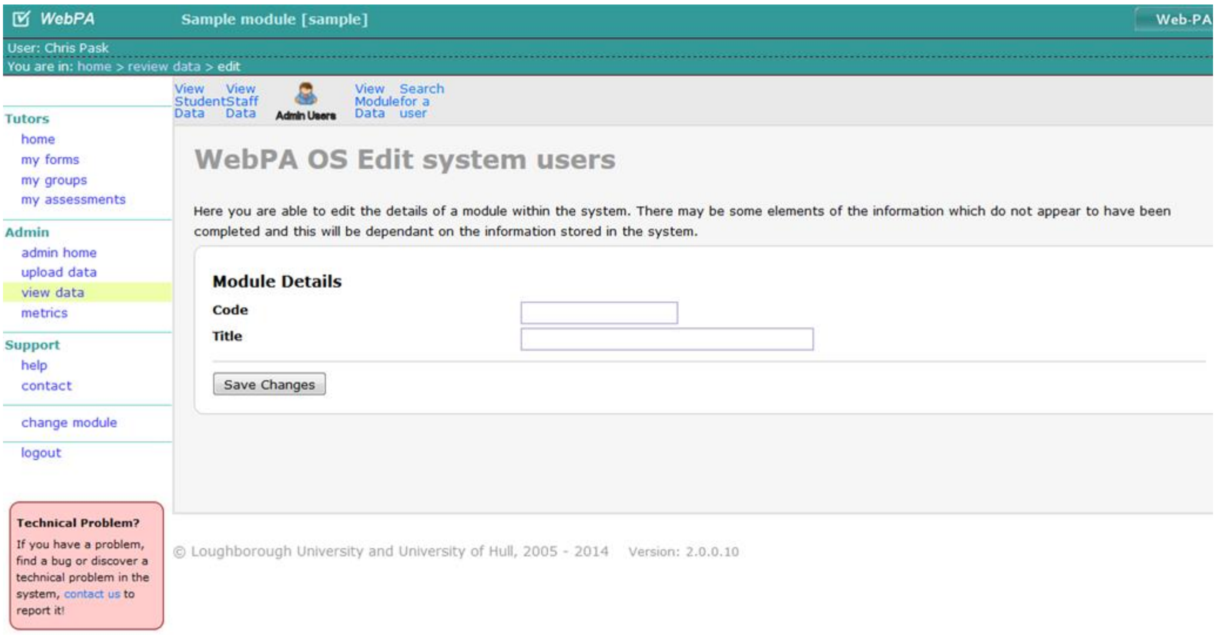
Click on “view data” then “module”.



Click on “create new module”.



Enter a code and title for the module then click “save changes”.

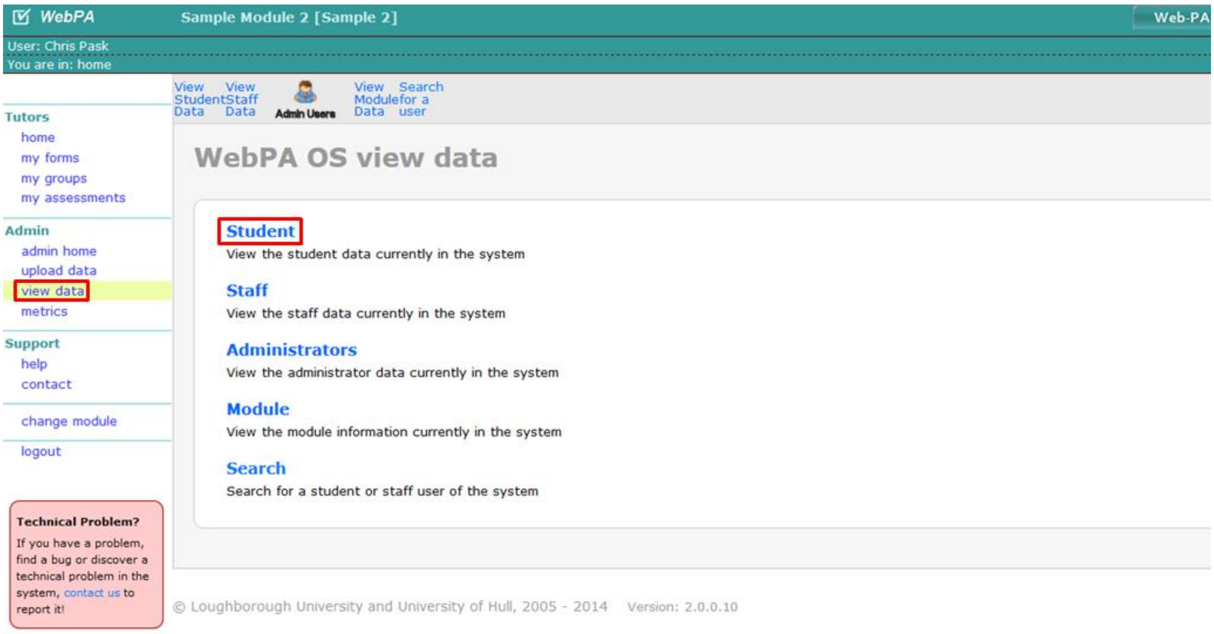


Adding users to a module

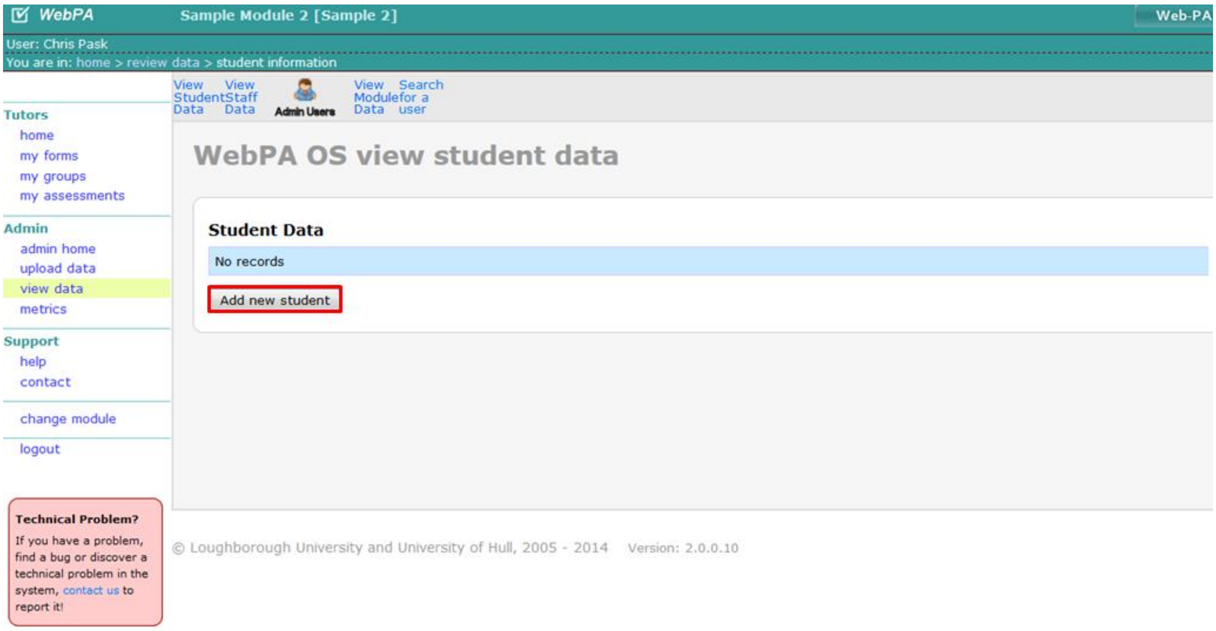
There are two ways of adding users to a module. The first is one by one, which is ok if you only have a few students. The second is to upload the users using a .csv file.

ONE BY ONE

Once you have selected the correct module ("change module" then select the module you're interested in) click on "view data", then "staff" or "student". If there are going to be no additional tutors I would just do everything through your administrator account.



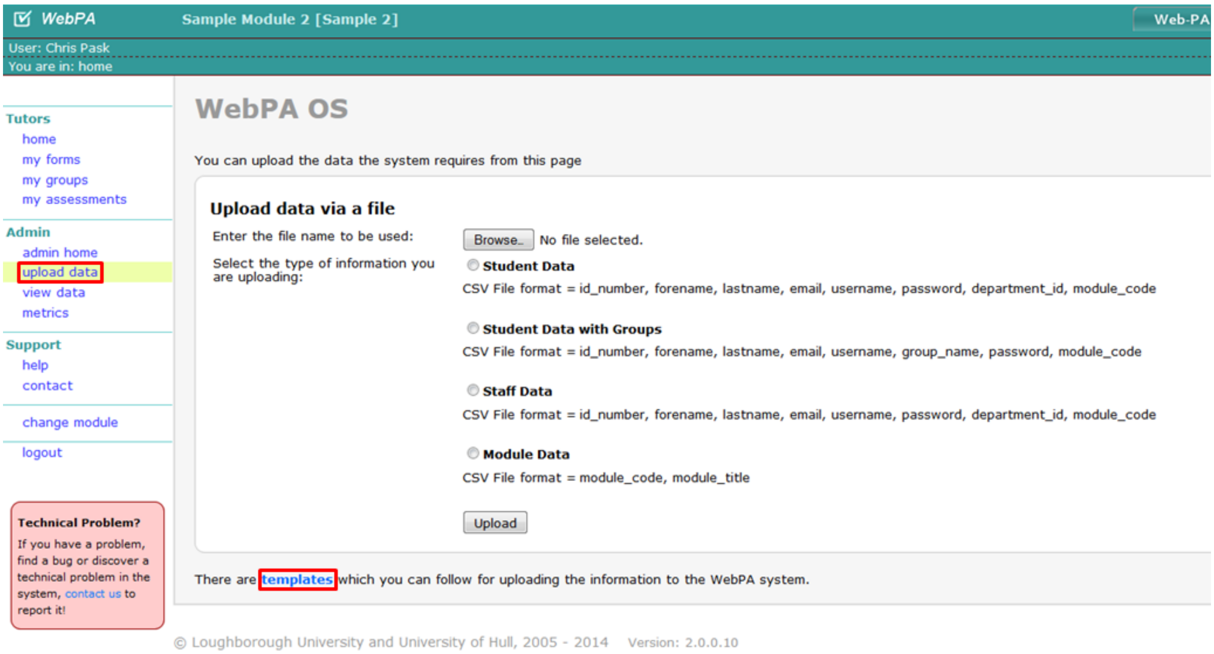
Click on "Add New Student".



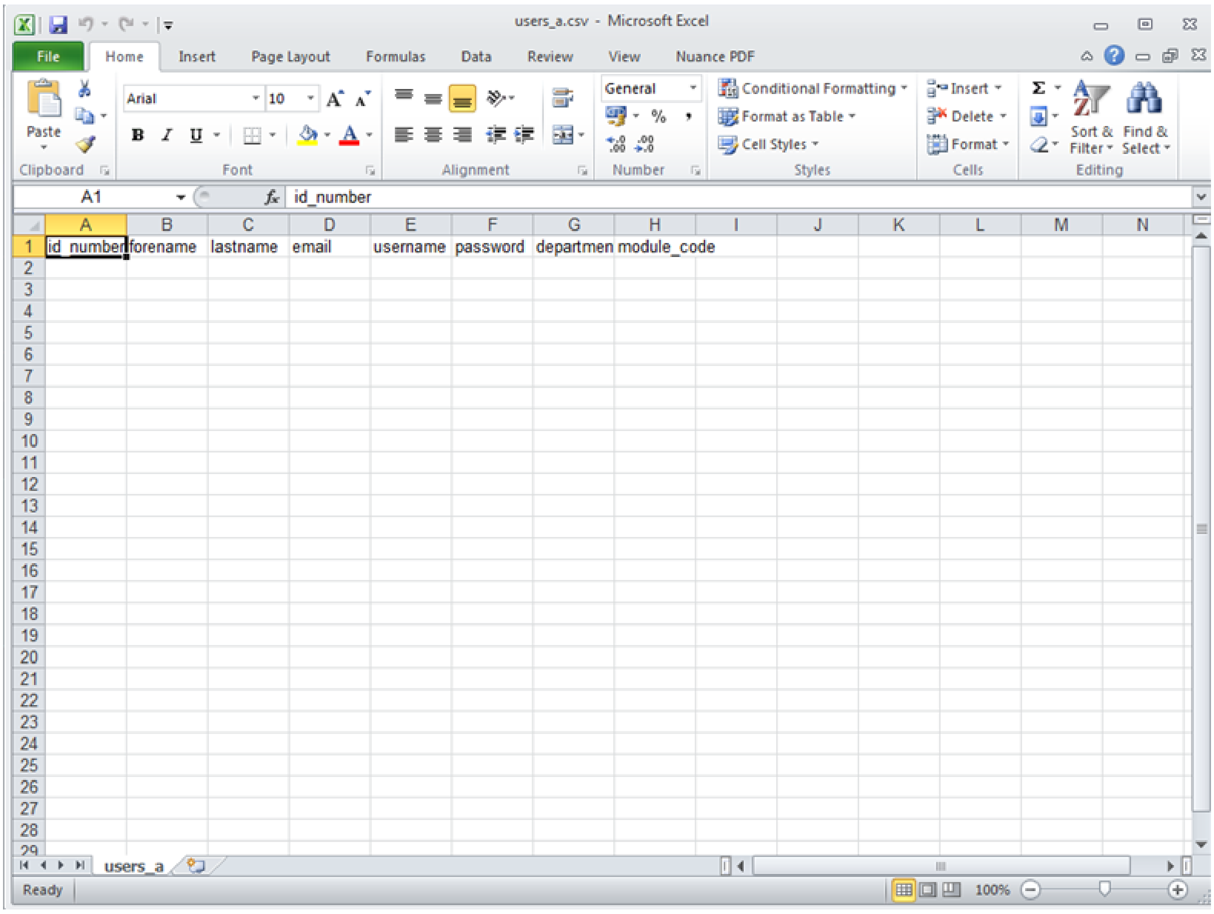
You'll then be able to edit all the data for an individual student, and repeat for as many students as you have.

UPLOAD AS .CSV

Click on “upload data”. This will take you to the following screen. From here, click on “templates”.

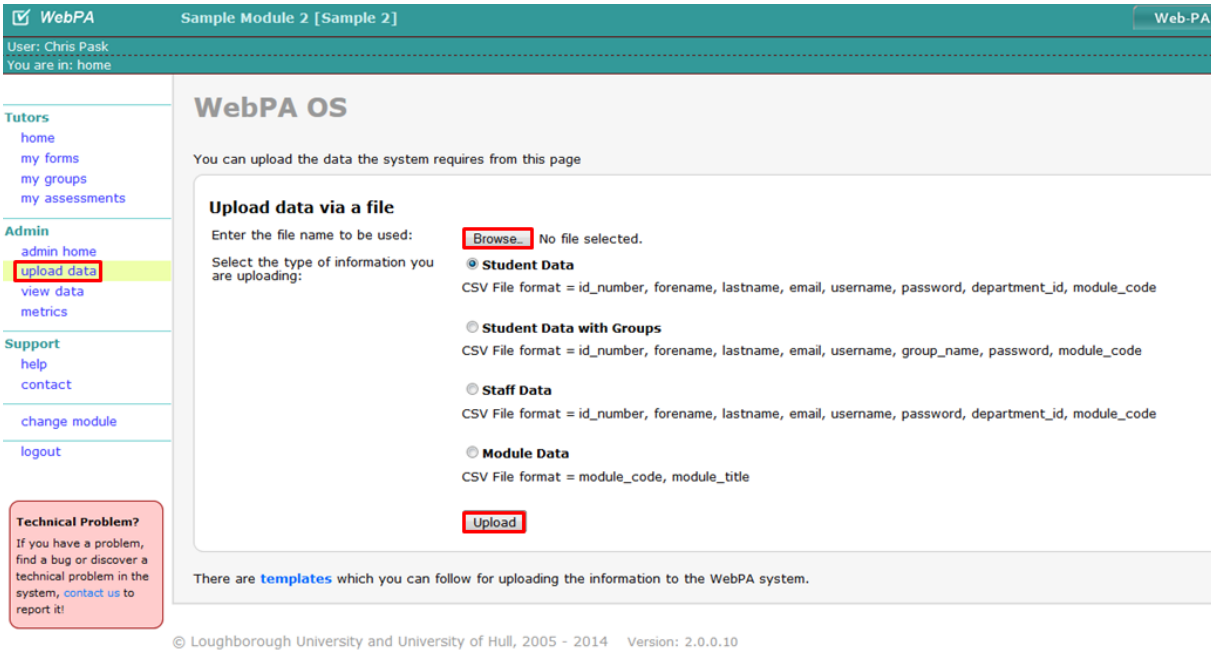


Download the template for “staff or student data”. You can then input the student data into the .csv file.



Any columns you're not going to use you should delete before uploading the file. You need the first six columns but can safely delete the last two. Most of the information can be copied directly from the list of students you can download from the relevant page on the faculty services website. Passwords can be randomly generated and pasted into the relevant column.

Once you have the completed .csv file, go to "upload data", "browse" then "upload".



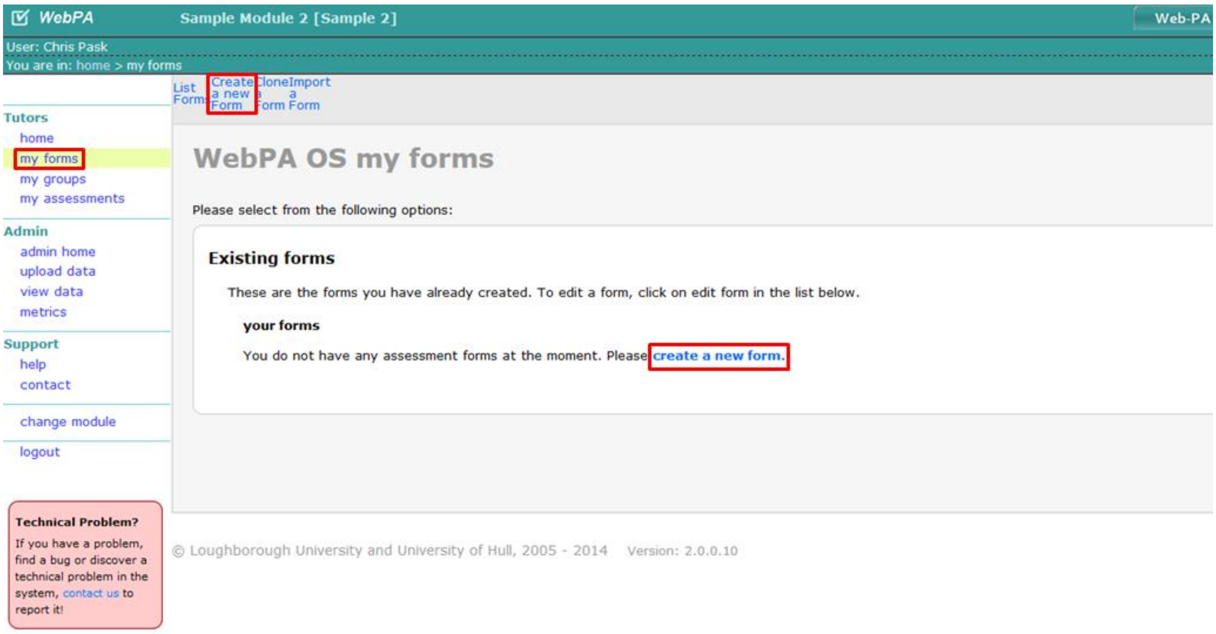
The students should now have been uploaded and assigned to the module.

If you wish to assign the same students to a different module, then you can edit the student data by clicking “view data” → “student” → “edit user”, but you would have to do this for each individual student. It would be easier to upload a new .csv file to the other module.

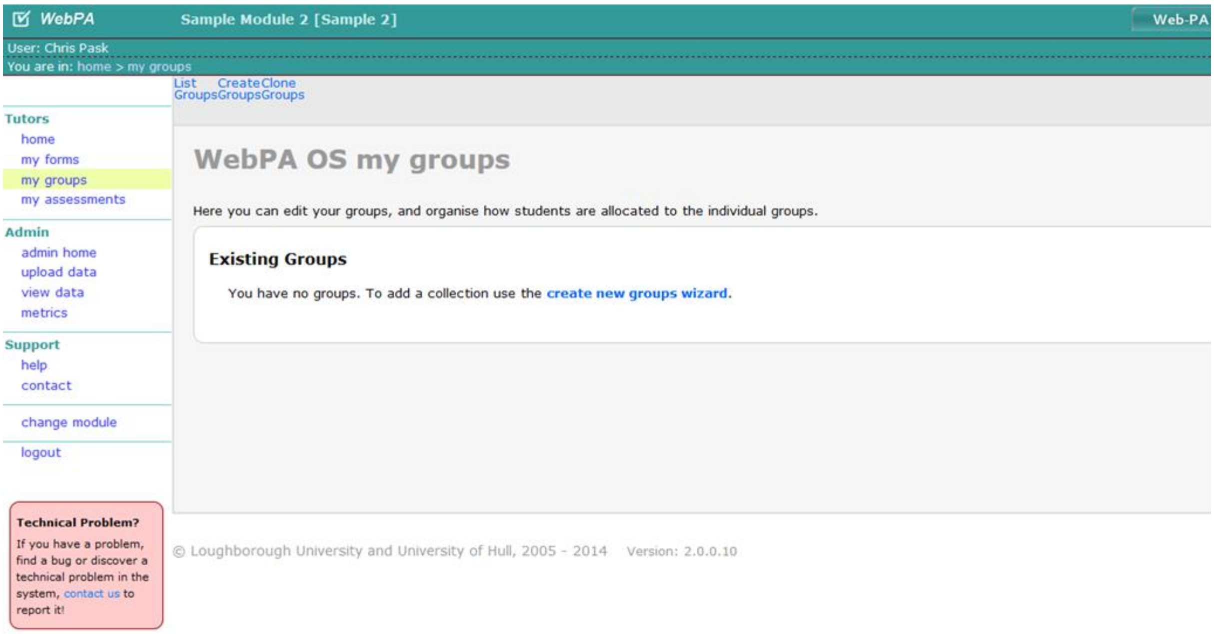
Creating assessments

Under the “tutors” section, click on “my forms” then “create a new form”. This sets up the criteria you will use in your peer assessment. Follow the instructions on screen to set up the scoring criteria and the criteria against which you’ll be assessing.

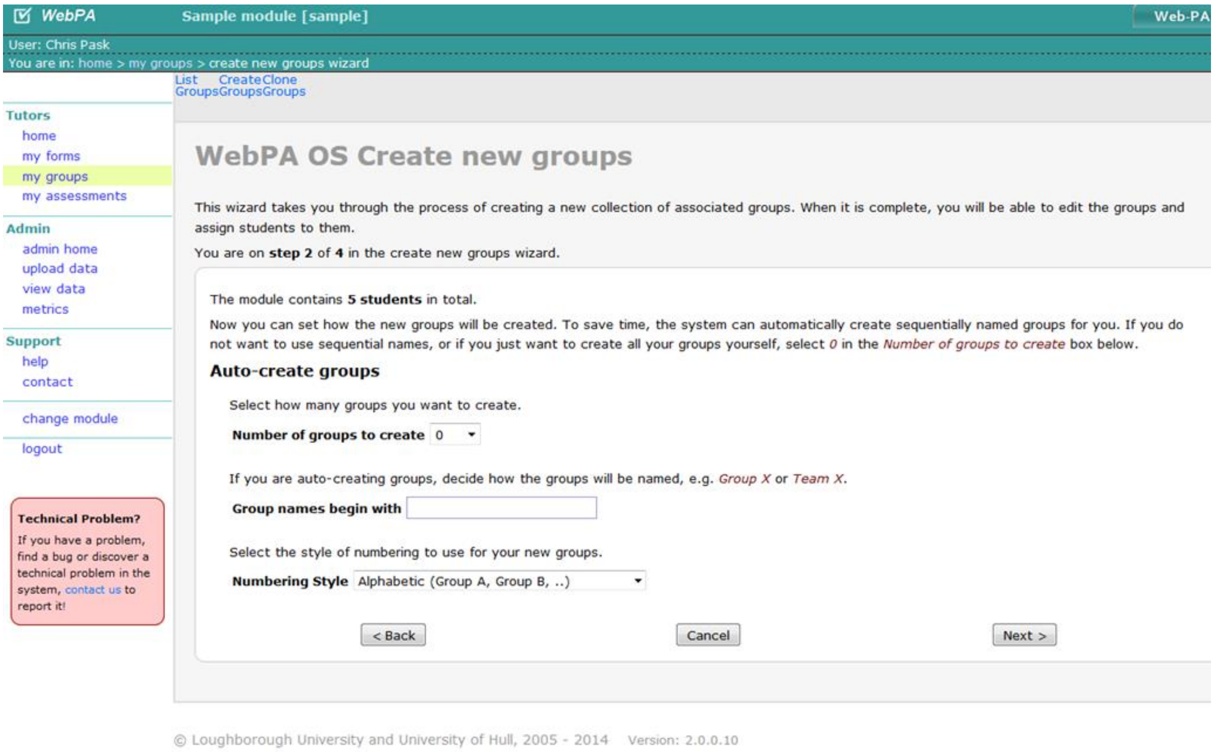
If you have a form set up in a different module that you wish to use, then select “clone a form” and you’ll be able to copy a form from that module.



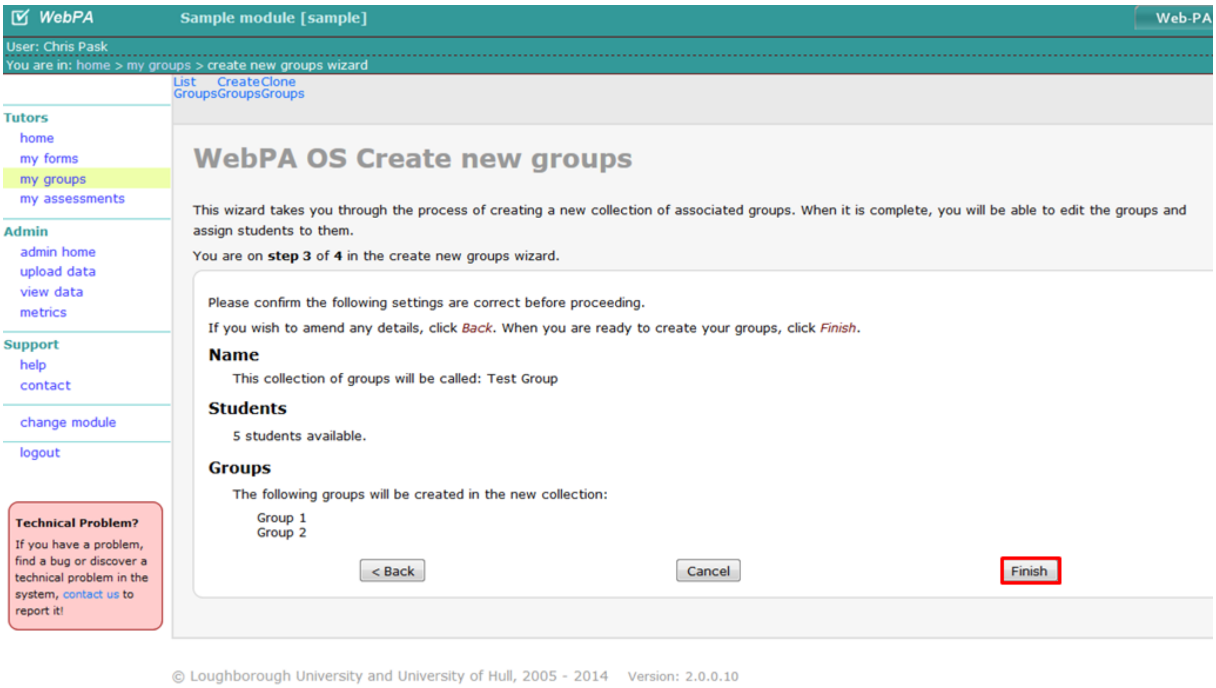
Click on “my groups” then “create groups”.



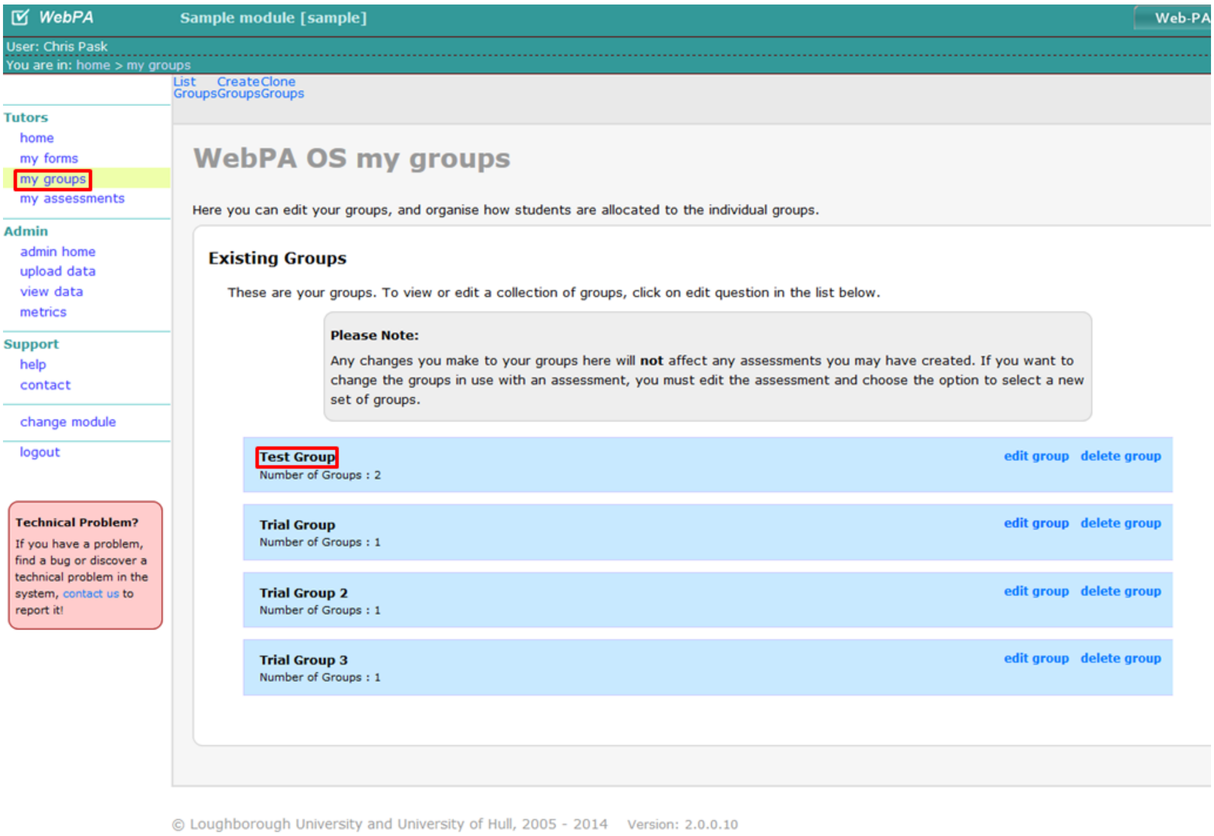
The wizard will then take you through the stages of setting up the groups for your assessment. You’ll first need to give a name for the collection (eg test group). You’ll then be given the option to auto-create the groups, depending on how many groups you want in total from the students available.



You'll then be taken to a confirmation page, where you can click "finish" to set up the groups.

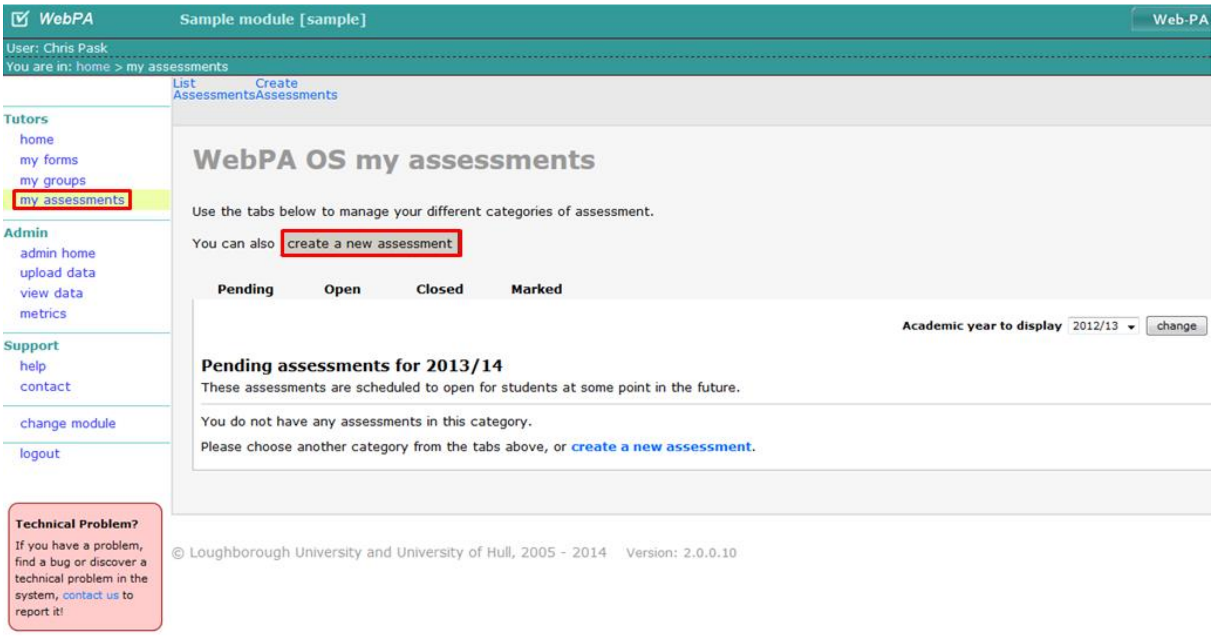


From the "my groups" link select the group you're interested in.



You can then click “assign all students to groups”, which will allow you to go through each student in turn and assign them to a particular group. At the moment, I don’t think you can assign students randomly to groups using WebPA.

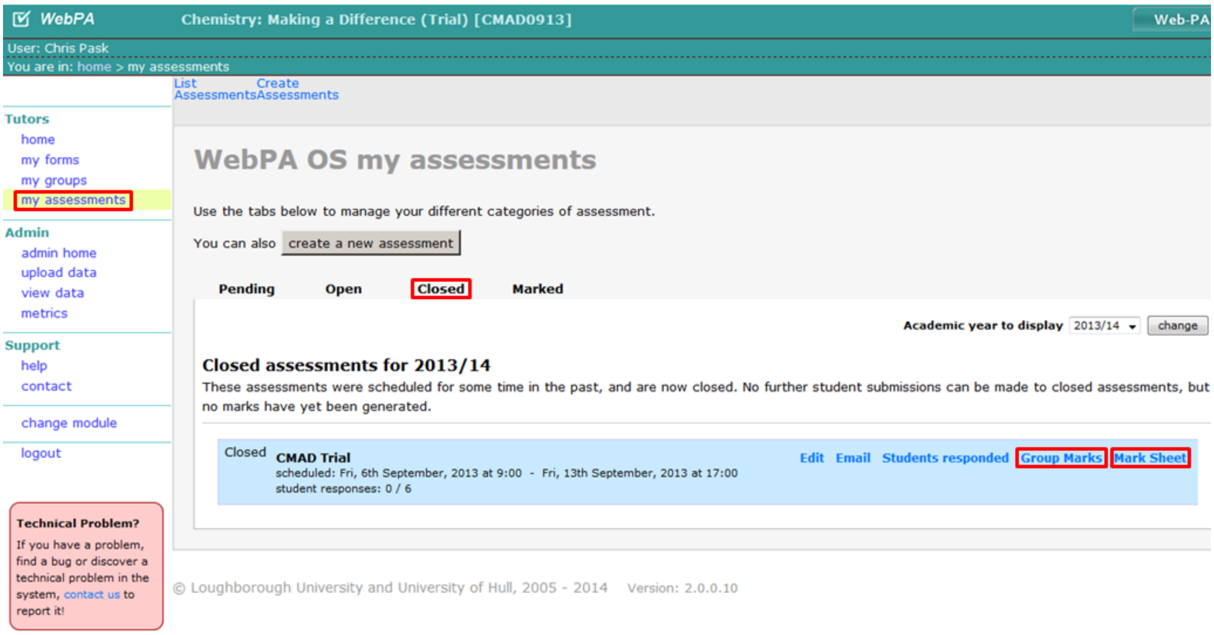
Once you have assigned all the students to their groups you can create an assessment. Click “my assessments” then “create a new assessment”.



The wizard will then take you through all the stages of setting up an assessment.

Marking Assessments

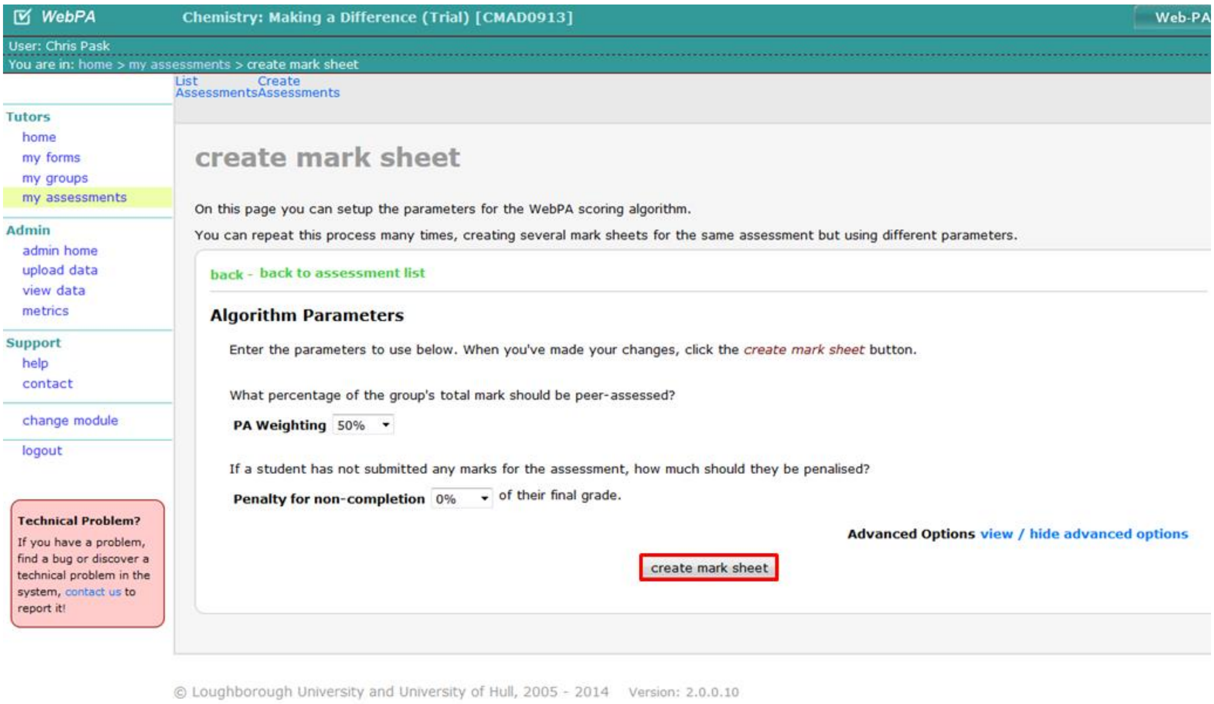
Once the assessment has closed, click “closed” under “my assessments”. The first thing to do is to assign the group mark to each group. Once this has been done click on “mark sheet”.



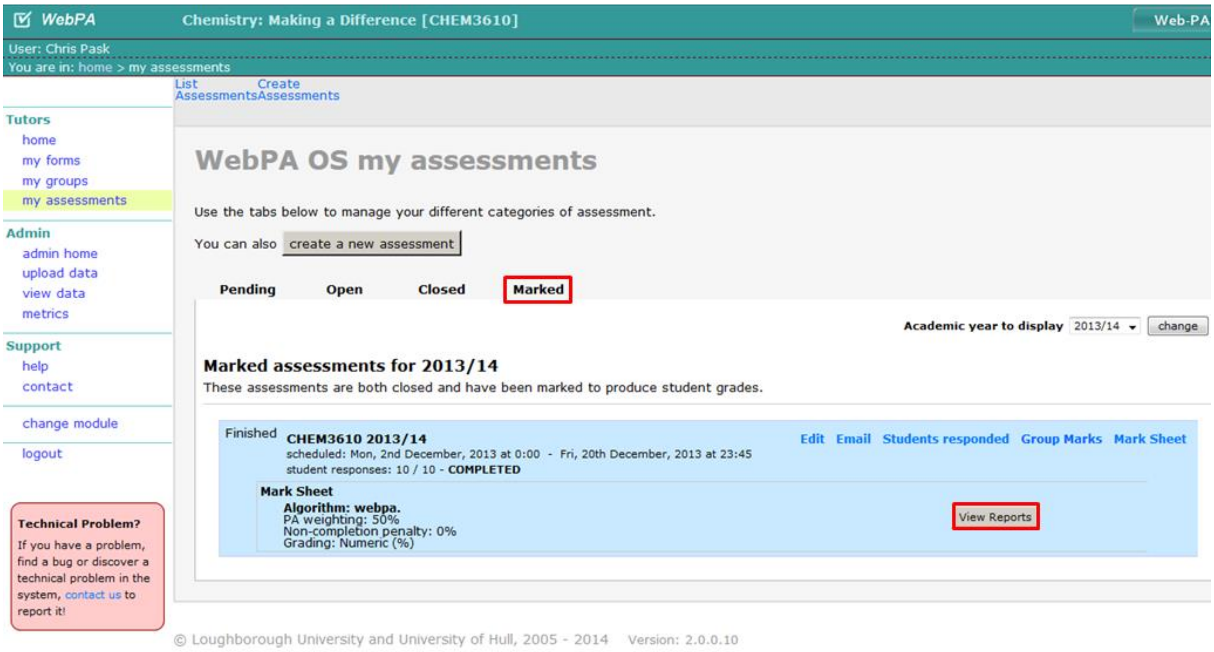
This allows you to set further options:

1. Whether or not you want the whole mark to be peer-assessed
2. Whether you want to impose a non-completion penalty

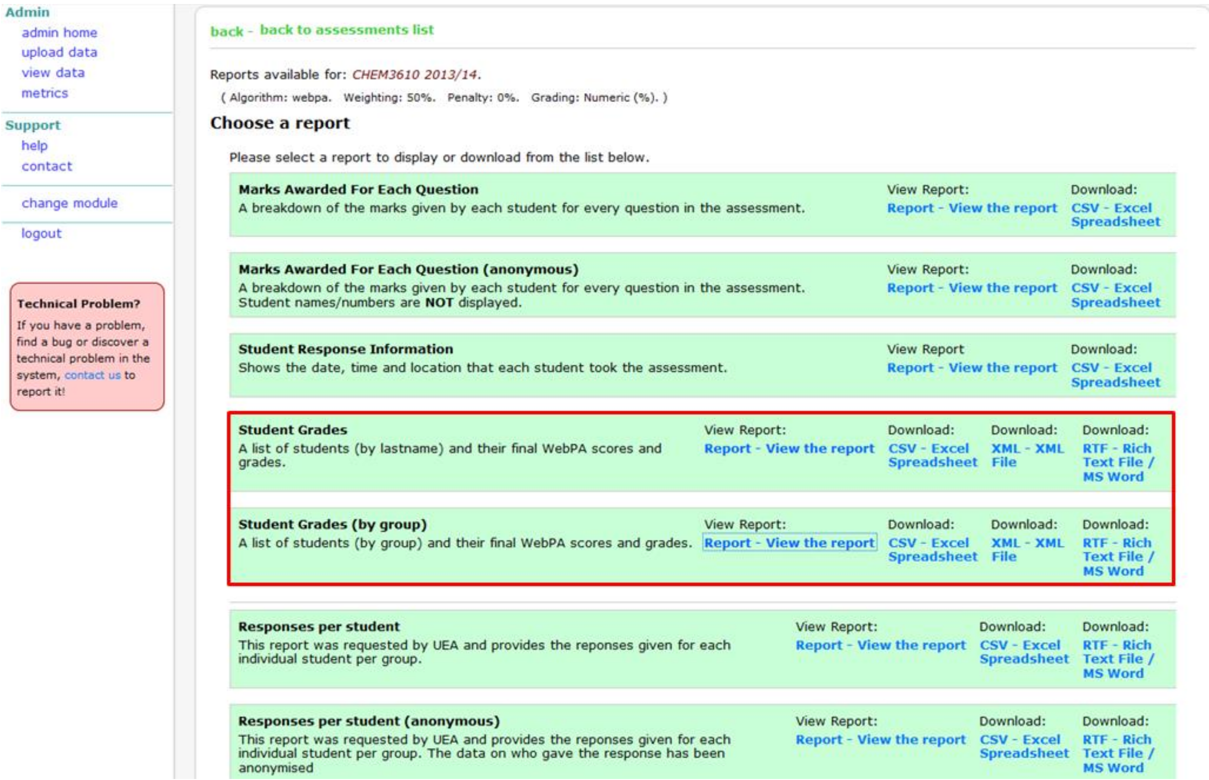
Once this has been done click on “create mark sheet”.



Once you've done this click on "marked" then "view reports".



This takes you to a screen where you can view and print out a number of reports, depending on what sort of information you're after. The two main ones I used were "student grades" and "student grades (by group)".



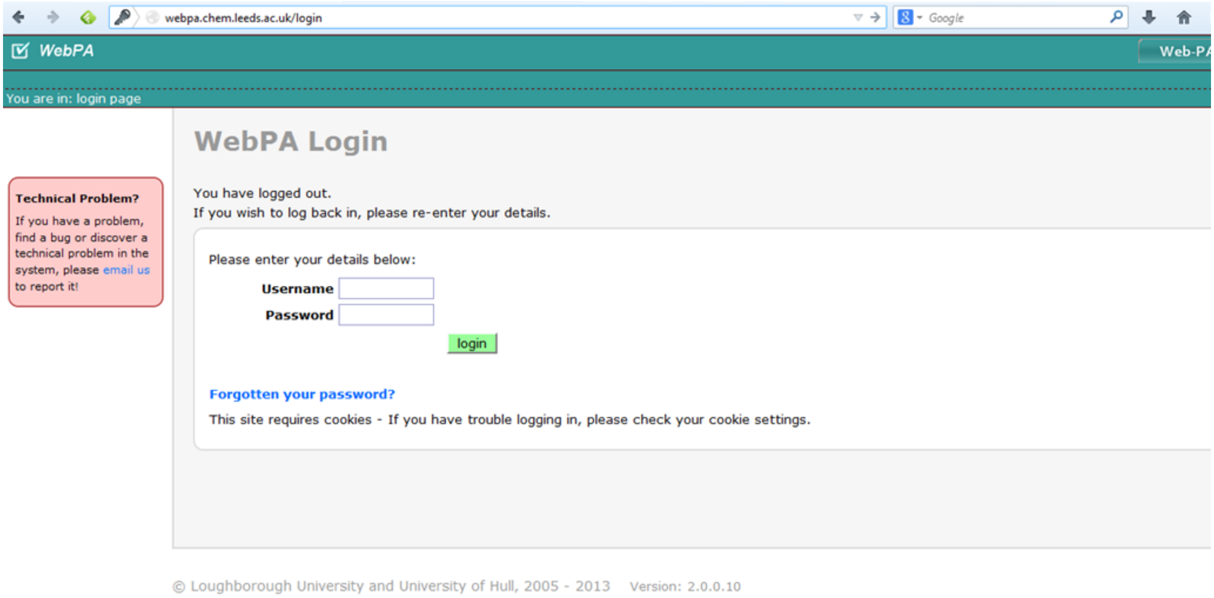
You can create as many mark sheets as you want for each assessment by altering the parameters under “Mark Sheet” in the “Marked Assessments” window.

A Brief Guide to Using WebPA for students

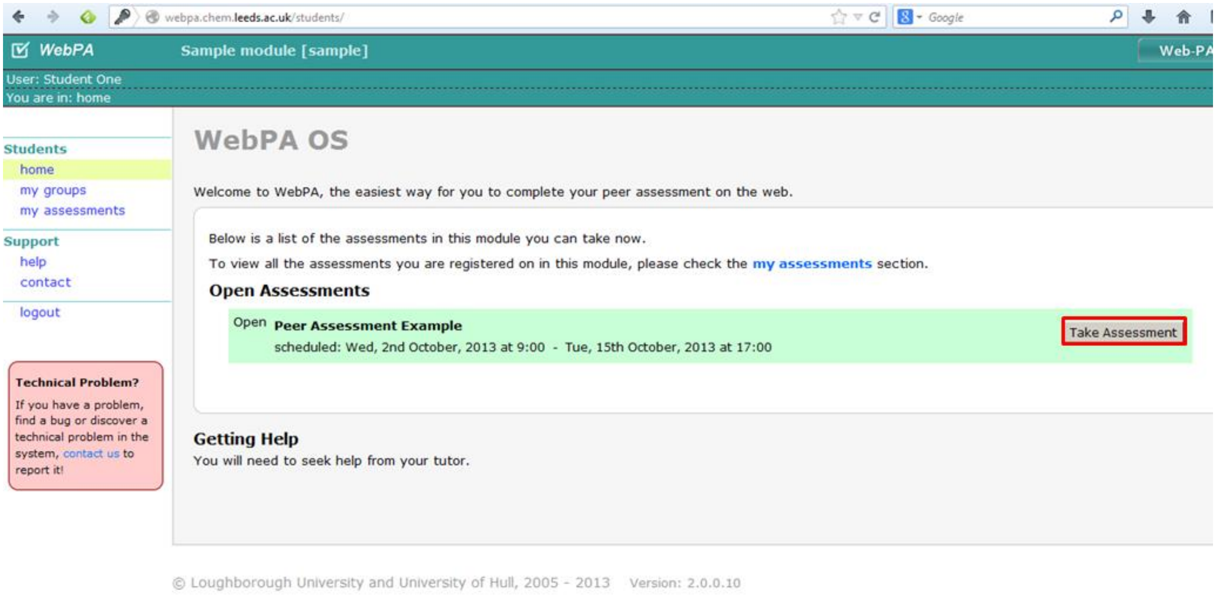
Login to WebPA using your username and password at

<Insert web page>

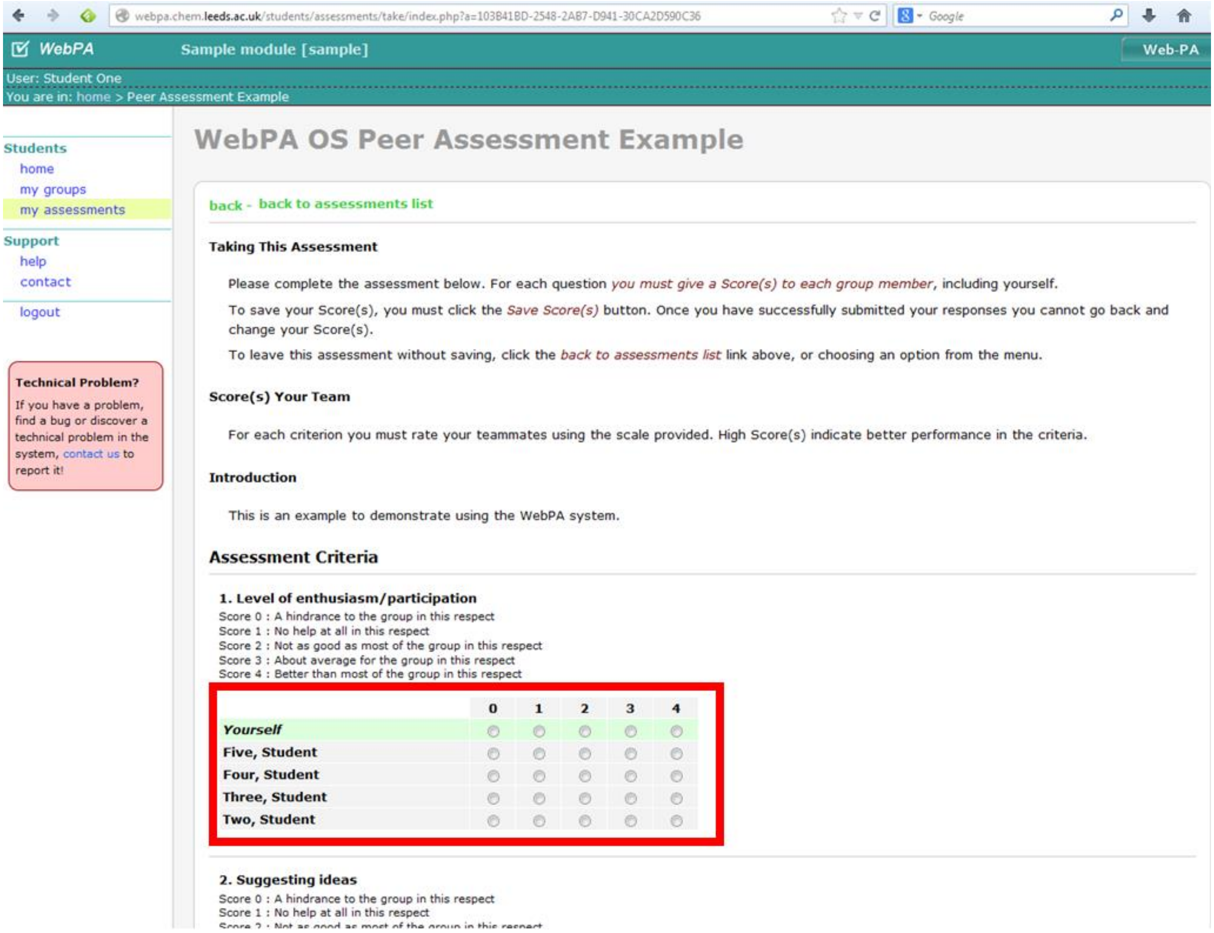
NOTE: Your password for WebPA has been generated for you and is not the same as your ISS login.



Once logged in you will see the assessment you have to complete. Click ‘take assessment’.

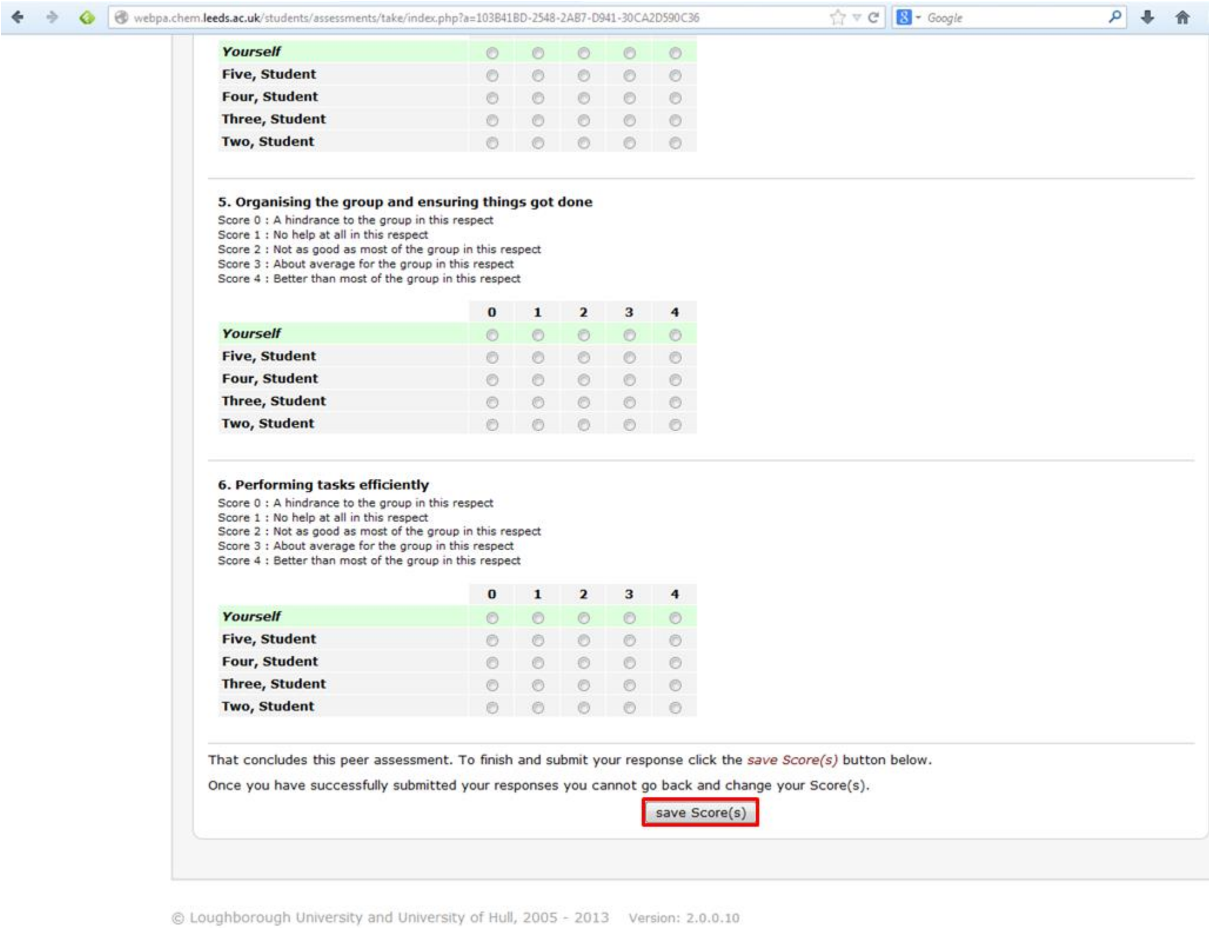


The criteria in the WebPA assessment are the same as outlined in the module handbook. You will be asked to grade yourself and the rest of your group on a scale of 0 – 4 for each criterion.

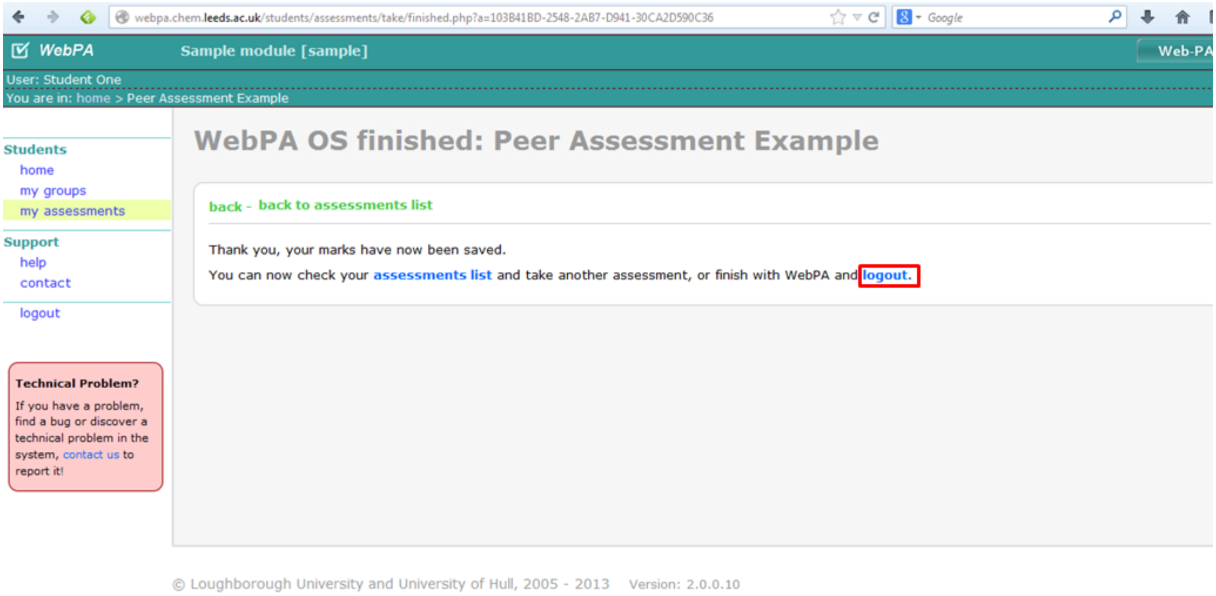


Once you have graded all students for all criteria click ‘save score(s)’ to submit your peer assessment.

NOTE: You will not be able to submit your peer assessment until you have completed the whole assessment.



Once you have completed your assessment you can click on ‘logout’ to exit the system.



Further information on using WebPA can be found at:
http://www.webpa.ac.uk/?q=node/329