

2015 First Year Experience (FYE) grants

Embedding transition pedagogies in the curriculum

Application form

Project applications (expressions of interest) must be submitted on this form. Applications must be submitted by **10 am Thursday December 4th, 2014**. Applications are to be submitted by email to Kathy Egea, UTS FYE coordinator at Kathy.Egea@uts.edu.au.

Project applicant/team leader:	
Name: Mackenzie de la Hunty	Position: Casual Academic
Contact email: Mackenzie.delahunty@uts.edu.au	Contact phone no:
Faculty: Science	
School/Department (if applicable): School of Chemistry and Forensic Science	
Other applicants if team application:	
Name: Alexandria Hunt	Position: Casual Academic
Name: Dr Scott Chadwick	Position: Lecturer (Chemistry 1 Coordinator)
Name: Dr Brian Reedy	Position: Senior Lecturer (Chemistry 2 Coordinator)
Name: Dr Alison Beavis	Position: Senior Lecturer
Name: Professor Anthony Baker	Position: Head of School of Chemistry and Forensic Science
Title of project: The introduction of an “online pre-lab” for first year chemistry subjects	
First year subject /Transition subject involved: Chemistry 1, Chemistry 2, Chemistry 2 Advanced	
Endorsement by Associate Dean (Teaching and Learning)	
I endorse this project application and confirm that embedding of the project outcomes in the subject will be supported by the Faculty.	
Signed	
Date:	
Have you received one or more FYE Grants previously?	
<input type="checkbox"/> Yes – please attach a progress summary (max 1 page) for any 2014 grant that is not yet completed. Reports from earlier grants will be taken into account.	
<input checked="" type="checkbox"/> No	

Project outline (max 1-2 pages) (See guidelines for detail)

A brief description of the aims and rationale for the project

Currently, students in the subjects Chemistry 1 and Chemistry 2 are required to complete a series of pre-laboratory questions each week prior to the commencement of their allocated class. Given the large diversity of chemistry knowledge in students undertaking first year chemistry, it is important that all students successfully complete the specifically designed pre-laboratory exercises so that they can derive maximum benefit from the practical session. It is important for their development in this subject that they have a uniform level of understanding of the theoretical concepts involved.

Currently, teaching associates (TA) check the students work during the laboratory session to gauge the students understanding and identify areas where the student may be struggling. This puts significant pressure on the TA to not only ensure that students understand the material, but also monitor the students as they set up their experiments. It can be difficult for the TA to balance these duties effectively and can result in a poor student experience. The introduction of an online pre-lab will allow the TA to be more 'present' during the laboratory sessions as the students will need to complete the work prior to entry into the class.

The introduction of an online pre-lab will also encourage a more 'student-centred' approach to the subject; since the students complete these activities prior to class, more time is left in class for open discussion and the sharing of ideas between students, supporting their sense of belonging in the university through peer interaction. It will also increase the availability of TA's to answer questions and monitor laboratory practice and safety, creating an authentic laboratory experience for the students and facilitating their success in the subject. Lastly, this project aims to compel students to take responsibility for their own learning using an online medium, and to actively seek help or obtain additional resources pre-emptively, should they have any difficulty with the material.

This project will improve the laboratory sessions for both TA's and students, making it a more productive environment.

First Year Curriculum principles for Transition Pedagogy addressed by the project (tick the appropriate box(es) Select the 1-2 strongest principles that you are addressing.

Kift (2009) First Year Curriculum principles for Transition Pedagogy -

<http://fyhe.com.au/transition-pedagogy/fy-curriculum-principles/>

- Transition
- Diversity
- X Engagement
- Assessment
- Design (broader focus)
- X Evaluation and Monitoring (broader focus)

Provide detail of how the selected principle(s) is (are) addressed in your project.

Engagement – This project will allow all students to develop their laboratory skills more effectively (regardless of prior laboratory experience) as the focus of the practical sessions will not involve TA's marking each student's work individually, but actively participating and helping them with their laboratory work. This will increase their engagement in the concepts being explored in the class. It is important that the students have a prior understanding of the concepts and laboratory skills being presented in the class to ensure complete engagement by the student in the laboratory session. This project will also aid in student-TA

engagement, as more of each TA's time will be spent aiding the students in the development of their laboratory skills and ensuring that the students are correctly understanding the material, and how it relates to the practical being undertaken. Integration of demonstrational videos detailing proper use of laboratory equipment in the online pre-lab will also increase student engagement and understanding, helping them to understand what practical based skills are required of them for each laboratory session. This is key to facilitating the learning of students that may not have prior chemistry experience in a laboratory.

Evaluation and Monitoring

This project will allow TA's and subject coordinators to better monitor student success with weekly result reports generated. Areas that students are struggling with can be more easily and clearly identified, and TA's and lecturers can then take additional steps to rectify any lack of understanding in the students. Immediate, targeted feedback can also be delivered to the student in order to direct them to additional resources or videos to assist them in their understanding. The platform we wish to use is UTSONline, which is accessible by both students and TA's, so both can monitor student progress.

Other University/Faculty/Course/Subject priorities addressed (optional)

This project has been designed with careful consideration of the UTS Model of Learning through deliverance and assessment of material using an innovative online medium. The system we are using will incorporate interactive tutorial exercises and questions, this will allow students to develop their knowledge but also since the activities are self-directed they will also gain skills in metacognition and self-efficacy.

Removing the need for TA's to mark and explain answers to the mandatory pre-lab questions during class ensures higher quality face-to-face teaching, and gives more time for collaborative discussion between students and TA's. This will ensure that the TA's are able to give the students an authentic laboratory experience from the first semester of university. This scheme will also be carried through to Chemistry 2, which will ensure that students experiences are carried throughout the first year and into any other future studies.

The abilities to give students immediate feedback on their performance is also very significant and they will be able to identify their weaknesses before entering the laboratory. This should empower the students to be independent in their own learning outside of the classroom and provide them with appropriate resources to help them in the subject. For the TA's, the ability to track an individual students performance and identify students that genuinely struggled with the material as opposed to not attempting it, will allow them to be more directed with their discussions in the laboratory as well as identifying students that are not engaging with the material on a sufficient level.

Key project activities and timeline, including appropriate activities that engage the overall teaching team (if applicable)

Phase 1

January/February 2015

- Training of online medium (Blackboard) for casual staff to develop skills using the program
- Development of written guidelines for both students and staff pertaining to the completion and assessment of online prelab materials
- Development of rubrics for the online material

Phase 2

February 2015

- Development of online pre-lab materials for practicals
- Development of extra resources for students who have difficulty with the online material
- Liaison with the subject coordinator pertaining to assessable content

- Finalising assessable material

Phase 3

June 2015

- Focus groups to be conducted with students and tutors
- Review of focus group answers
- Addition of extra reading material and/or questions for the modules that were performed poorly

Project Budget
(insert table or spreadsheet if appropriate)

Your evaluation strategy ie how you will know that the project has been successful, with particular focus on the transition pedagogies that you have chosen, and how will you collect information to improve the outcomes?

The success of the project will be assessed by focus groups and SFS questions with students completing the subject for the first time, students completing the subject for the second (or possibly third) time and senior TA's who have been exposed to the original pre-lab system (as they will be able to assess the difference between the success of previous classes compared to those using the new online pre-lab system). Students and senior TA's will be able to provide valuable information on the usefulness and clarity of the online prelab questions, and suggestions as to their improvement for future semesters and their future implementation into other Chemistry subjects.

and budget justification (remember to add on-costs – approximately 17%) Salary rates:

<http://www.hru.uts.edu.au/conditions/pay/rates.html>

Phase	Item	Amount
1	Casual Academic Blackboard Training (with IML) Student assistant (10 hours @ \$42.41) + 17%	\$496.20
	Development of rubrics and written guidelines Student assistant (5 hours @ \$42.41) + 17%	\$248.10
2	Development of Online material Student assistant (40 hours @ \$42.41) + 17%	\$1984.20
	Liaison with subject coordinator Student assistant (5 hours @ \$42.41) + 17%	\$248.10
3	Focus groups at the conclusion of semester (Movie tickets)	\$200
	Review Student Assistant (5 hours @ \$42.41) + 17%	\$248.10
TOTAL		\$3 424.70