

# 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](mailto:Kathy.Egea@uts.edu.au).

<b>Project applicant/team leader:</b>	
Name: Dr Scott Chadwick	Position: Lecturer (Chemistry 1 Coordinator)
Contact email: <a href="mailto:scott.chadwick@uts.edu.au">scott.chadwick@uts.edu.au</a>	Contact phone no: x2758
Faculty: Science	
School/Department (if applicable): School of Chemistry and Forensic Science	
<b>Other applicants if team application:</b>	
Name: Dr Brian Reedy	Position: Senior Lecturer (Chemistry 2 Coordinator)
Name: Mackenzie De la Hunt	Position: Casual Academic
Name: Alexandria Hunt	Position: Casual Academic
Name: Dr Alison Beavis	Position: Senior Lecturer
Name: Professor Anthony Baker	Position: Head of School Chemistry and Forensic Science
<b>Title of project: Establishing Professional Identify in First Year Science</b>	
<b>First year subject /Transition subject involved: Chemistry 1, Chemistry 2, Chemistry 2 (Advanced)</b>	
<b>Endorsement by Associate Dean (Teaching and Learning)</b>	
I ..... endorse this project application and confirm that embedding of the project outcomes in the subject will be supported by the Faculty.	
Signed	
Date:	
<b>Have you received one or more FYE Grants previously?</b>	
<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.	

No**Project outline (max 1-2 pages) (See guidelines for detail)****A brief description of the aims and rationale for the project**

Students in first year chemistry classes come from a variety of backgrounds, with many students unaware of proper laboratory practice. Throughout the semester, students will develop their cognitive skills over time, but they are not adequately assessed on their professional affective behavioural skills as a scientist in a laboratory setting. The skills we plan to assess include; self-reliance, cooperation in group activities, time management, objective problem solving, knowledge and practice of safety rules. By introducing a 'Professional Practice Point' (PPP) system into the practical classes, students will be able to identify, emulate and adopt appropriate laboratory practices right from the first semester of university.

This project aims to develop first year students professional identity in first year chemistry subjects Chemistry 1 and 2. We want to introduce students to the idea of professionalism in a laboratory setting and allow them to develop their skills through the semester. By allowing students to become aware of professional identity and what it means to be a scientist from the very first semester, students will hopefully carry this through their whole undergraduate degree.

**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
- Engagement
- Assessment
- Design (broader focus)
- Evaluation and Monitoring (broader focus)

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

Transition – This project will allow all students (regardless of prior laboratory experience) to develop their professional identity and laboratory based skills. With students entering university from different pathways (school-leavers, mature age, TAFE etc), we cannot assume that the skills we wish to assess (time management, teamwork, independence) have previously been taught. It is important that we allow all students to develop their skills in a laboratory setting to ensure that students are able to begin their undergraduate studies strongly and carry through these principles through their degree right through to their working career.

Assessment – By assessing individual students on their abilities rather than their knowledge of the discipline it can allow us to deliver timely and relevant feedback to the students every week. Students will be given their ‘professional points’ by their teaching assistant and they can see whether that mark reflects their own assessment of their performance. The platform we wish to use for this system is Review, which can also allow students to see how they are performing with respect to their peers. Similarly by integrating the ‘professional point’ criteria into their laboratory manuals, the process will allow for transparent process of assessment. A portion of the laboratory assessment will be dedicated to the students reflecting on their performance and commenting on their strengths and weaknesses from both the laboratory and the in class assessments. These will be collected in the students laboratory manual where they will be able to identify their strengths and weaknesses from each week in the laboratory.

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

This proposal has been considered with the UTS Model of Learning in mind, with particular focus on providing students with ‘integrated exposure to professional practice through dynamic and multifaceted modes of practice-orientated education’ and ‘Professional practice situated in a global workplace with international mobility and international and cultural engagement as a centre piece’.

By introducing this idea into our first year subjects with will allow us to shift the focus from solely discipline based content to a more ‘integrated-work based learning’ assessment of students. The skills we plan on assessing (time management, problem solving, teamwork etc) are all vital skills By providing students with authentic laboratory experiences, this will better prepare our students for any internships, work experience or international exchange activities they may encounter during their degree allowing them to be excellent representatives of the university.

Self-assessment is another key aspect that we will embed into this scheme, we plan on including a section in their laboratory manuals for them to include a reflection of their performance in the laboratory. Students will be able to develop their self-efficacy through the post-lab reflection task which will ask them to list items they believe they did well in and areas they thought they could improve. Teaching assistant will then give them their PPP and students will be able to see if their opinion of their performance is in line with the teaching assistant (and the marking criteria).

A significant part of preparing them for the workforce is to provide them with the tools necessary to identify and adopt appropriate laboratory behaviour and practices. While we will be assessing the students in Chemistry 1 and 2 there will also be excellent cross-collaboration with Principles of Scientific Practice, which all first year science students will be studying concurrently with Chemistry 1. The collaboration between the two subjects will allow for a multi-modal approach to embedding the professional skills into the first year through the use of practicals, lectures, tutorials and workshops.

To ensure that these skills are embedded strongly into the first year, this idea will be reinforced by bringing it into Chemistry 2 and given a larger weighting. We view that these skills will be able to applied across all disciplines and the students will be able to take the skills learnt in this subject and apply it to their current and future studies.

**Key project activities and timeline, including appropriate activities that engage the**

**overall teaching team (if applicable)**

This project will be divided into 3 phases, these are as follows

Phase 1: Development

Phase 2: Implementation and Monitoring

Phase 3: Review and Reassess.

Phases 2 and 3 will be repeated for the spring semester when this scheme is implemented into Chemistry 2.

Phase 1: Development

The goals of this phase are to ensure that this assessment reflects modern laboratory practices and working behaviours we will be performing a thorough review of literature on professional practice assessment. We will also be consulting with senior staff and experienced teaching assistants to assist in defining the criteria and developing a rubric to ensure that the assessment is fair and reasonable.

Phase 2: Implementation and monitoring

This phase will be a significant portion of the project and will cover a range of areas. Firstly a review of the subject outline for Chemistry 1 will be performed and the assessment weighting will be determined. Before the semester starts, all teaching assistants will be briefed on the new assessment and trained in proper assessment of professional skills. During the registration session teaching assistants will be providing students with the guidelines surrounding PPP and informing them on how the scheme will run. There will also be a collection of online resources related to professionalism as an undergraduate science student that will be readily available to the students through UTSONline. Once the semester starts, students will be introduced to the new assessment scheme in lectures and practical orientation sessions. Information regarding the assessment of students will be made available through UTSONline and within the students practical manuals so they have constant access to the marking criteria.

Phase 3: Review and reassess

During semester we plan to prepare specific SFS questions regarding the professional point system in order to obtain the students feedback on the assessment. We will also be performing a more open evaluation through student and teaching assistant focus groups to gain more feedback from both sides of the assessment. This phase will directly relate to how we will run this assessment in the spring semester in both Chemistry 1 and Chemistry 2. This process will be repeated at the end of the spring semester to determine how effective it was compared to the autumn semester.

**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?**

Feedback from teaching assistants and students regarding the effectiveness of this strategies – can be obtained through SFS data and focus groups. These will provide us with valuable information from two different perspectives. From the teaching assistant feedback we should be able to monitor how effective students were at self-assessing their performance and whether those skills were developed over time. Similarly, teaching assistants will also be able to provide anecdotal evidence of a student's transition through the subject and whether their background played a role in the extent of their development. Students will be able to provide us with information regarding their ability to self-assess and how useful this system was in providing them with the tools to become effective professional learners.

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**Project Budget** (insert table or spreadsheet if appropriate) and budget justification (remember to add on-costs – approximately 17%) Salary rates:

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

<b>Phase</b>	<b>Item</b>	<b>Amount</b>
1	Student assistant (10 Hours @ \$42.41) + 17%	\$496.20
2	Student assistant (35 Hours @ \$42.41) + 17%	\$1736.69
3	Student assistant (16 Hours @ \$42.41) + 17%	\$793.92
Evaluation	Student assistant (5 Hours @ \$42.41) + 17%	\$248.10
	Movie tickets for focus group participants	\$225.00
<b>TOTAL</b>		\$3499.91