

THE TRIALS AND TRIUMPHS OF RE-DEVELOPING A NEW CHEMISTRY COURSE

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ABSTRACT

We have been developing a new and innovative first year chemistry laboratory course over six years. This course has been designed to be delivered to approximately 2000 students a week for chemistry majors and non-major degrees in a three hour time slot. The standard first year chemistry laboratory programmes are expository in form and largely concept-oriented. These new laboratory exercises have been developed around the pedagogies of active learning and social constructivism. Central to these changes is the goal of presenting experimentation as an independent and personal route to knowledge and problem solving rather than just as a supplement to the lecture-based material. Therefore the variety of exercises offered has been increased, and has allowed a substantial shift in the emphasis away from purely 'academic' laboratory exercises, where the exercises are aimed purely at reinforcing some well established piece of textbook knowledge to the open-ended practical tasks that a professional scientist would follow. The new course represents a change in learning outcomes, not just a change in the format of the 'old' laboratory exercises. The nineteen new laboratory exercises have been trialled and some of them re-trialled with approximately 180 students over four years, and are now being implemented into the first year chemistry laboratory course at The University of Sydney.

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