

Engagement with a truffle company for chemistry students in a unit

In SCC3201 Analytical Chemistry, students engage with a local truffle company

SCC3201 Analytical Chemistry provides students with detailed theory and practice of key analytical methods in separation science (chromatography and capillary electrophoresis). Emphasis is placed on the development of relevant laboratory skills that are authentic to current work practices and workplaces. Learning and assessment activities are linked to particular authentic industries so that students clearly see the relevance of their learning.

Learning outcomes

On completion of SCC3201 Analytical Chemistry, students are expected to be able to:

- demonstrate a variety of laboratory skills;
- describe analytical techniques and their applications;
- demonstrate effective written and verbal communication skills;
- demonstrate problem solving and critical appraisal skills;
- work in teams; and
- demonstrate relevant numeracy and mathematics skills.

Learning Activity

In the **first five weeks of semester**, students complete set experiments in laboratory sessions. In carrying out these experiments, students complete activities that will help them begin to design and plan their own experiments (rather than just follow a recipe). One example is the use of evaporative light scattering detection to detect and quantify carbohydrates present in truffles (for this activity, **students engage with the truffle industry**). The lecture is used to present new material in a normal lecture format and also to discuss and clarify readings. Each week, students are given a few papers to read (and write notes that develop their academic and English language skills) on the lecture topic prior to coming to class. In class time, students clarify, discuss and explain some of the concepts. This approach is to help students to extract, synthesise and summarise information.

In SCC3201 Analytical Chemistry, students use evaporative light scattering detection for the first time. The detector and technique is particularly suited to carbohydrates. **Students determine the carbohydrate levels present in truffles for a local company. The involvement of the truffle industry provides both relevance and interest for the students. As the truffle industry is an emerging industry in Australia, any data on the WA grown truffle is of interest in helping to harvest high quality truffles so the industry benefits from student learning activities.** The students perform the laboratory techniques, research literature to find data on expected results in truffles, collate results from the whole class, perform statistical analysis on results, design and complete tables of results, draw graphs, compare results with those expected, discuss results and produce a full written report of the data from the whole

class to the company. Any company prefers a concise report with accurate data clearly displayed. So **the concise report (the product and service that students create as a learning and assessment activity) is provided to the external partner organisation.**

Assessment in SCC3201 Analytical Chemistry is authentic to chemistry laboratories and any other relevant industry partner. Assessment includes a full scientific laboratory report that will be completed in teams. **The truffle company provides feedback on the report particularly on the data.** The best two laboratory reports are given to the truffle company.