Guidance relating to implementation of essential practical skills list

This list is a minimum requirement for RSC degree accreditation. The purpose of this skills list is not to replace key requirement 6 of the accreditation criteria, which stipulates that a BSc programme should contain at least 300 hours of practical and an integrated Masters programme should contain at least 400 hours of practical, but to add clarification on the minimum expectations of a chemistry graduate.

It is expected that each practical skill is met in bachelors level programmes, but in masters level programmes further examples for the practical skills can be provided. These may be additional examples of techniques consistent with specialisation in a particular area.

- For example: *Plan, design and correctly rationalise experiments to test a scientific hypothesis in a timely manner which considers important measurement criteria such as accuracy and precision* may involve complete method validation to appropriate guidelines and a full statistical evaluation of the results in the masters year.

Where we have stated that a "wide range" should be used, this should be considered across all branches of chemistry

- For example. *Set up a wide range of reactions using a range of heating/cooling methods and appropriate atmospheres* should cover a wide range of chemistry applications and not be focused only on one branch of chemistry (e.g. only organic chemistry techniques and methodologies)

When a set of techniques are listed, it is not expected that a student has had experience of all the techniques, but a range including other similar techniques. This will be dependent on individual departmental resources.

- For example. *Prepare samples for and interpret spectra from a wide range of commonly used spectroscopic and spectrometric techniques such as infra-red, UV-visible, nuclear magnetic resonance, mass spectrometry, polarimetry, fluorescence, Raman, atomic absorption spectroscopy, X-ray diffraction and microscopy*. Certain departments may have access and expertise in other methods such as circular dichroism, electroanalytical methods, inductively coupled plasma or hybrid techniques that could be included.

Computational chemistry and chemical informatics have their place in the curriculum, in addition to (but not to replace) essential practical skills.

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