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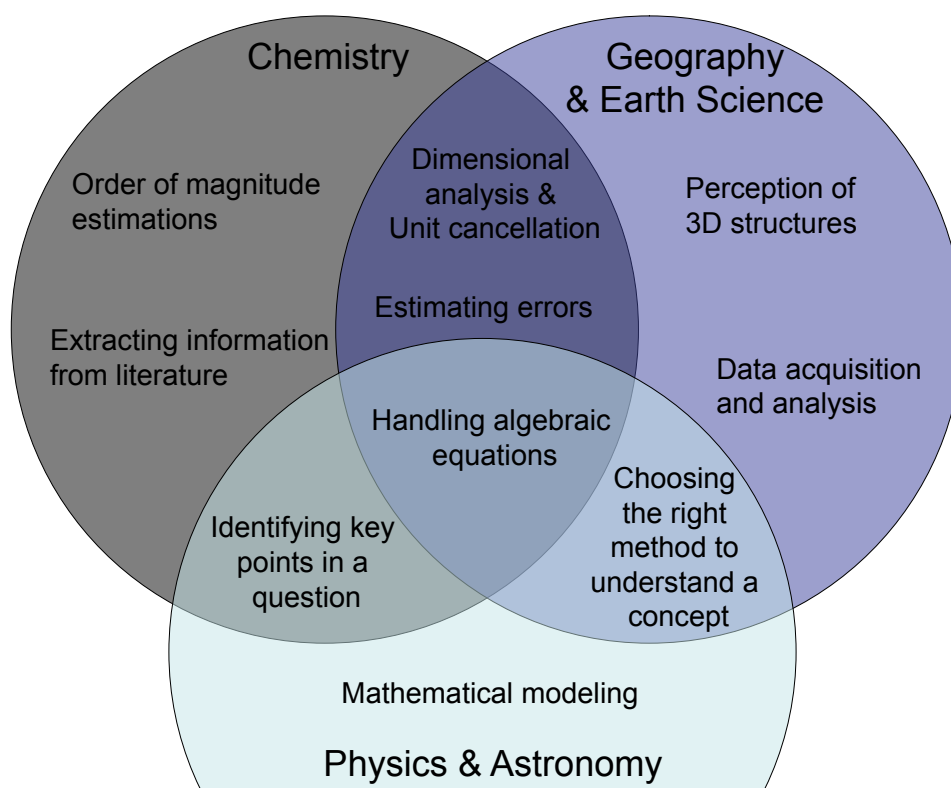
School of Physics and Astronomy

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Introduction

- To become adept at a scientific discipline requires more than just an ability to recall factual information. Students need to have the skills to use that knowledge effectively.
- In 2012-13, a project was run in the College of Science and Engineering to identify what these skills were in Chemistry, Geography & Earth Science, and Physics & Astronomy. The views of students, academics and employers were sought.
- They were asked to consider what they thought were important skills, and which they felt they weren't confident using themselves.

Key skills that students felt a lack of confidence in applying



Conclusions

▪ With such obvious overlaps between the subjects an interdisciplinary, skills-based, course will be introduced for level 2 COSE students from 2013-14: "**Science Skills**". The aims and objectives for this draw from the above, and beyond:

1. Carry out order of magnitude estimation and approximation calculations.
2. Determine the errors on calculations.
3. Demonstrate an ability to manipulate algebraic expressions.
4. Perform dimensional analysis to identify unknown variables.
5. Identify key components within a problem to enable its solution.
6. Be able to correctly interpret three-dimensional models.
7. Demonstrate how to collect and process scientific data.
8. Demonstrate how to extract and evaluate information from wider sources, e.g. literature and the internet.
9. Solve problems collaboratively.
10. Identify appropriate roles for team members and allocate tasks according to strengths and interests.

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