Applied Geology Critical Thinking Standards
Rubric creation reflection

Critical thinking goes hand-in-hand with problem solving, which was described in a separate reflection as one of the cruxes of both applied and theoretical geology. Without well-honed critical thinking skills, a geologist is destined to failure in the problem solving arena. In addition to providing the underpinnings for good problem solving capabilities, critical thinking is essential for the assessment of data (from both external and internal sources), design and review of experimental and field methods, and logical interpretation of results.

In the beginning stages of a career in any field of science, students commonly accept all sources of information that they can access as equally valid (hence the tendency to use Wikipedia as an authoritative resource!). A neophyte rarely seeks out multiple viewpoints or reads widely enough to discover conflicting hypotheses and may be unable to make a valid judgement about the relative merits of differing assertions when they are encountered. Students need to see the importance of growing beyond their comfort zone and learning to make well reasoned decisions regarding which studies to accept or disregard.

I hope that this rubric will be useful for designing assessments within Applied Geology that support the development of critical thinking skills, rather than simply assuming all students have this capacity from day one. It also highlights the need to emphasise to students the necessity of thinking critically about sources of information throughout our course and to ensure students are capable of doing so prior to graduation.