Learning Outcomes

Master of Science (M.S.)

1. **KNOW:** Students will develop and demonstrate advanced knowledge of a sub-specialty of geosciences, including understanding of, for example, historical and cutting-edge concepts, approaches, and techniques used in the field.

2. **ANALYZE & CREATE:** Students will demonstrate the ability to contextualize the results of data collection and analysis.

3. **RESEARCH IMPLEMENTATION:** Students will demonstrate the ability to develop and implement scientific approaches, utilizing data collection, analysis, or numerical models, to address a question or hypothesis.

4. **COMMUNICATE:** Students will develop the ability to communicate their research findings to an audience of their peers in both written and oral form.

5. **QUANTIFY:** Students will develop the ability to incorporate quantitative analysis of data to support interpretations.

6. **CRITICAL THINKING:** Graduates will be able to critically analyze and assess work by others in their field of specialty.

7. **PROFESSIONAL PRACTICE:** Students will demonstrate knowledge of ethical standards in research and scholarship, and the ability to collaborate in a collegial and ethical manner with other professionals within their field or with diverse scientific backgrounds.

Doctor of Philosophy (Ph.D.)

1. **KNOW:** Students will develop and demonstrate advanced knowledge of a sub-specialty of geosciences, including understanding of, for example, historical and cutting-edge concepts, approaches, and techniques used in the field.

2. **ANALYZE & CREATE:** Students will demonstrate the ability to independently conceive a research hypothesis or question, and to contextualize the results of data collection and analysis.

3. **RESEARCH IMPLEMENTATION:** Students will demonstrate the ability to develop and implement scientific approaches, utilizing data collection, analysis, or numerical models, to address a question or hypothesis.

4. **COMMUNICATE:** Students will develop the ability to communicate their research findings to an audience of their peers in both written and oral form.

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