1. Acquire quantitative and spatial reasoning skills and the ability to apply those skills to problems in geoscience.

2. Be able to explicate key biological, chemical and physical Earth structures, processes, the interactions between them, and the roles that they play in determining the state of the Earth system.

3. Utilize geological observations and measurements to solve problems involving the timing of geological events in Earth history.

4. Combine data and lab/field-based observations into a novel synthesis and/or description/model of how Earth systems operate.

5. Be able to critique published scientific data, results, and interpretations thereof, as well as identify and assess related work in the scientific literature.

6. Be able to effectively communicate scientific concepts, methods, and results.