Earth Science Education Majors and Minors Rock and Photo Collections

Field trips are opportunities for you to collect rock samples and photographs for your teaching collections. Former BYU Earth Science Education students say that these collections are one of their most valuable classroom assets. You will need the listed samples and photos from each field trip to build a GEOL 380 portfolio. Record your experiences – how it smells or feels. For example, “This is me at the Grand Canyon, it was super cold that day. We hiked 7 miles to see the great unconformity ... and this is it!”

- **Samples**: Collect the samples, label them, and keep them for your future classroom (and for your 380 portfolio).
- **Photos and Experiences**: Photograph and record geologic features that you experience on the trip. Take lots of photos!

### GEOL 111 Field Trip

<table>
<thead>
<tr>
<th>Samples</th>
<th>Photos and Experiences*</th>
</tr>
</thead>
</table>
| - Sandstone,  
- siltstone,  
- shale,  
- conglomerate,  
- limestone,  
- dolostone,  
- coal,  
- any other usual and unusual rocks that you see | - Grand Canyon: stratigraphy, the great unconformity  
- Goosenecks of the San Juan: Incised Meanders  
- Laccolith - Henry's & La Sal Mtns  
- Photos of Units from each Geologic Period that you see  
- Weathering - erosional profiles: cliff formers and slope formers; erosional remnants; pediments  
- Wasatch Fault; Sevier Thrusting (Willard Thrust)  
- Lake Bonneville: Provo & Bonneville shorelines; Marsh Valley  
- Horst and graben  
- Monocline; anticline  
- Laramide Uplift (San Rafael Swell from a distance)  
- Glen Canyon Dam |

*Not all locations will be visited each semester.*

### GEOL 112 Field Trip

<table>
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<tr>
<th>Samples</th>
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</table>
| - Limestone  
- granite  
- any other usual and unusual rocks that you see  
- fossils | - Dinosaur Museum  
- Basin & Range tectonics  
- Alluvial fans & bajadas  
- Sand dunes |

### GEOL 351 Yellowstone Field Trip

<table>
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<tr>
<th>Samples</th>
<th>Photos and Experiences</th>
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</table>
| - Rhyolite,  
- basalt,  
- staurolite,  
- garnet,  
- amphibolite,  
- crenulated phyllite  
- gneiss,  
- marble | - biotite and/or muscovite schist,  
- any other usual and unusual rocks that you see  
- Island park caldera  
- Yellowstone geothermal: geyser, hot springs, fumarole, mud pot, altered rhyolite  
- Pahoehoe  
- Rhyolite lava flows  
- Henry’s lake collection localities |

### GEOL 351 Meadow Creek Dugway Field Trip

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| - Rhyolite tuff,  
- obsidian,  
- pumice,  
- concretions,  
- any other usual and unusual rocks that you see | - Ignimbrite  
- Root casts  
- Faults  
- Base level (rise and fall of reservoir, sedimentation and erosion where Meadow Creek empties into the reservoir) |
### GEOL 404 Wasatch Front Field Trip

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</table>
| - Oolites (?)  
- soil associated with landslides (clay, silt)  
- any other usual and unusual rocks that you see | - Lake Bonneville and Great Salt Lake  
- Urban landslides and their effects  
- Wasatch fault evidence (faceted spurs, scarp, etc.)  
- Rock falls  
- Retention ponds (flood and debris flow control)  
- Kennecott mine processing and pollution clean-up  
- Mine tailings; mining materials (raw ore, crushed ore, sulfide concentrate, copper)  
- Landfill + energy recycling; pollution sources  
- River Reclamation |

*Not all locations will be visited each year.*

### GEOL 404 Quake Lake Field Trip

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| - Dolostone, phyllite, quartzite (in the gravel deposits), amphibolite, biotite/muscovite schist, other schists, any other usual and unusual rocks that you see | - Teton Dam  
- Quake Lake  
- Rock avalanche; Headwall of a landslide  
- Secondary effects of an earthquake  
- Holocene fault scarp  
- Glacial outwash plain, u-shaped valley (in the Henry’s lake area, looking out onto Antelope Flats and back into the Red Road area)  
- Mine tailing restoration  
- Open pit mine;  
- Berkeley Pit pollution |

### GEOL 380 Field Trips

<table>
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<tbody>
<tr>
<td>Tetons</td>
<td>Granite, metamorphic and intrusive rocks, sandstone, other sedimentary rocks found in the Gros Ventre Mtns.</td>
<td>Glacial landforms: u-shaped valley, moraine, horn, etc.; Teton glacier hike; Holocene fault scarp; Sevier, Laramide, and Basin and Range structures; Gros Ventre Canyon and landslide</td>
</tr>
<tr>
<td>Kelly Canyon, Ririe Res., Cress Creek</td>
<td>Air fall ash, Obsidian, porphyritic basalt, rhyolite lava flow</td>
<td>Confluence Snake River</td>
</tr>
<tr>
<td>Craters of the Moon National Monument</td>
<td></td>
<td>Cinder cones, lava tubes, desert environment</td>
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<tr>
<td>Big Springs, Mesa Falls</td>
<td></td>
<td>Ground water, meandering streams, point bars, cut banks, gravel bars, water falls, headward erosion, undercutting</td>
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<tr>
<td>Fossil Forest in Yellowstone National Park</td>
<td></td>
<td>Relative dating, rhyolitic volcanism, possibly geysers, paint pots</td>
</tr>
</tbody>
</table>

### Recommended: Any Geology Society Trip and these Local Trips

Field trips are not planned to these sites as part of your required geology courses. We recommend that you learn about the geology and visit most if not all of the sites. Be sure to take photos and collect samples.

- Sand Dunes  
- Civil Defense Caves  
- Borah Peak  
- Crystal Butte (at the end of Red Road on the Yale-Kilgore Road)  
- Spencer Opal Mines  
- Big Southern Butte