

**The University of Arizona  
Geosciences Department**

**The Lowell Program in Economic Geology  
Short Course on Topics in Mineral Deposit Types: Porphyry Deposits (GEOS 504C)  
Early to Mid-December**

The course will have a focus on exploration geology that will include 3½ days of lectures and 2 days of labs in Tucson, and 3½ days of field trips to representative ore systems in Arizona.

The deposit types that we will cover include:

- porphyry and skarn (Cu, Cu-Au, Cu-Au-Mo, Au-Cu)
- igneous-related Au-rich epithermal systems (high and low sulfidation)
- alkaline epithermal Au
- iron-oxide-copper-gold "IOCG" (Au, Cu-Au, barren), and
- brief comparisons with other deposit types

The lecture topics relating to these deposits will include:

- distribution and geologic setting
- character of related igneous systems
- hydrothermal alteration and ore mineral assemblages
- structural aspects – pre-, syn-, and post-mineral
- geochemistry of ore-forming systems
- comparative geophysics
- economics and metallurgy
- comparison with other groups of Au, Cu, and barren systems

The laboratory topics will include:

- rock suites from all deposit types, and
- alteration and ore mineral types and textures
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Field trips will visit accessible examples of a number of these types of systems in southern and central Arizona.