

# Teaching

GEOL 105 Gems and Gemstones  
GEOL 316 Optical Mineralogy  
GEOL 365 Igneous and Metamorphic Petrology  
GEOL 420/520 Mineral Resources  
GEOL 507 Midwestern Geology Field Trip

## Courses taught by Paul Spry

### **Geol 105 Gems and Gemstones** (1 credit; second-half of Spring semester)

What should you pay, where should you buy, and how much is that gemstone worth? This 7-week course provides an introduction to almost everything you ever wanted to know about gems and gemstones. The important 4C's (carats, cuts, clarity, color), gemstone flaws, physical and optical properties of gems, how to identify gems and gemstones, the difference between synthetic and natural gems will be covered. There will also be a demonstration to show how gems are characterized through the use of basic gemological equipment such as a gemscope, loupe, dichroscope, polariscope, and refractometer. Guest lectures by local gem dealers. No prerequisite.

### **Geol 316 Optical Mineralogy** (2 credits; Fall semester)

Introduction to optical mineralogy with a transmitted light microscope. Laboratory problems in mineral identification methods, including hand-specimen identification and x-ray diffraction. Non-major graduate credit. Prerequisites: Geol 100 or 201.

### **Geol 365 Petrology** (5 credits, Spring semester)

Nature and origin of igneous, metamorphic, and sedimentary rocks. Emphasis on important rock-forming environments and processes and their influence on rock characteristics. Laboratory includes thin section study of rock textures and mineralogy and the interpretation of these features. Non-major graduate credit. Prerequisite: Geol 316X.

### **Geol 420/520 Mineral Resources** (3 credits; alternate Fall semester – 2020)

The demand for metallic minerals (e.g., gold, copper, rare earth elements) is high with the U.S. running a shortfall for several commodities. The focus of this course will be on metallic mineral deposits. The question is how will society as a whole and you as individuals deal with these shortages? I hope to arm you with some of the facts about metallic and some non-metallic mineral deposits. This course should provide senior undergraduate and graduate students with the necessary geological background to seek employment in the mining industry. The discussion on metallic minerals will primarily focus on commodities mined and explored for in the United States but international examples will also be discussed. Employment opportunities in the mineral resources sector have fluctuated over the last three years but it is anticipated that these

opportunities will be sustainable for the distant future. The lab component of the class will involve the identification of opaque minerals (i.e., sulfides, sulfosalts, native metals, etc.) with reflected light microscopes using suites of samples from worldwide locations.

**Geol 507 Midwestern Geology Field Trip** (1 credit, Fall semester)

On-site inspection of various metallic and non-metallic mineral deposits, ore districts, mining operations, and mineral processing plants. Offered on a satisfactory-fail grading basis only. Field trips each year alternate between ore districts in Missouri, Iowa-Wisconsin, Colorado, South Dakota, Michigan, and Minnesota.

Prerequisite: Geol 365