

# **GEMS, CRYSTALS, AND MINERALS**

**GEY 116**

**SYLLABUS**

**Spring, 2010**

**INSTRUCTOR      Dr. Chuck Patterson.  
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**Text: None required, two recommended (see Red Rocks bookstore for selection)  
Simon & Schuster Guide to Gems and Minerals,  
Sorell, Golden Guide to Rocks and Minerals.  
Some material will be provided**

**Class meets Friday evening, Feb 19, 6-10, Sat, Feb 20, 8-5**

## **Friday evening Schedule**

### **5-6 Introduction**

**Definitions of mineral, crystal, gem.  
Formation of gems and minerals  
Video "Minerals and Rocks"**

### **6-7 Mineral properties, physical, optical, chemical**

### **7-8 Crystal Systems, crystal symmetry and forms, mineral forms and growth habits**

### **8-10 Mineral identification practice**

## **Saturday Schedule**

### **8-9 Mineral ID practice**

### **9-10 Video "Gemstones of North America"**

### **10-11:30 Gems**

### **11:30-12:30 Lunch**

### **1-2 Video "Precious Stones"**

### **2-5 Field Trip, CSM museum**

**Essay questions: (to be turned in to my mailbox in Instructional Services) by 2/26 (5 of 7)**

- 1. Define Mineral and Gem in detail. Relate minerals and gems to rocks and environments of formation**
- 2. Describe the process of identification of minerals by physical properties.**
- 3. Describe the optical properties of minerals (color, refractive index, polarization, birefringence, etc) and use in faceting and identification.**

4. **Discuss and describe cleavage, crystal face, growth habit and forms, twin crystals**
5. **Describe and discuss the quartz family of minerals**
6. **Pick a favorite gem and describe it: Physical & optical properties, occurrence, value, history and lore.**
7. **Discuss the History of Mineralogy**