

# **GEMS, CRYSTALS, AND MINERALS**

**GEY 116**

**SYLLABUS**

**Spring, 2012**

**INSTRUCTOR**      **Dr. Chuck Patterson.**  
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**Text: None required, several recommended (see Red Rocks bookstore for selection)**  
**Hall, Smithsonian Guide to Gemstones**  
**Polk, Collecting Rocks, Gems and Minerals**  
**Simon & Schuster Guide to Gems and Minerals,**  
**Sorell, Golden Guide to Rocks and Minerals.**  
**Some material will be provided as handouts**

**Class meets Friday evening, Feb 10, 5-10, Sat, Feb 11, 8-5:30**

## **Friday evening Schedule**

### **5-6 Introduction**

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

**6-7 Mineral and gem properties, physical, optical, chemical**

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

**8-9 Video "Precious Stones"**

**9-10 Mineral identification practice**

## **Saturday Schedule**

**8-9 Mineral and Gem ID practice**

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

**10-11:30 Gems: types, characteristics, origin, locales**

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

**12:30-1:30 Review of material, discussion of further topics**

**1:30 Depart for CSM museum (Waiver must be signed to participate in field trip)**

**2-4 Field Trip, CSM museum**

**4-5:30 End of class discussion, questions**

**Essay questions: (to be turned in to my mailbox in Instructional Services) by 2/17 (5 of 7 and #8)**

- 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**
- 8. Completion of CSM Museum guide and questionnaire**

Additional Information

Important Disclaimer: This syllabus is as accurate as possible. However, it may be changed as necessary due to weather, illness, or other reason.

Please refer to Student handbook for policies relating to Academic Honesty. In general, plagiarism and/or cheating in any form is not tolerated. Penalties range from getting a zero for the exam or assignment, to expulsion from the College.

Students with disabilities will be accommodated according to their needs, but arrangements must be made in advance with Jackie Stanton, Office of Special Services, Rm. 1182, LRC