

Syllabus  
Hydrogeology Field Camp, GEOL 475/875  
Summer 2002

**Meeting:** MF 0830, Room 342 Brackett Hall

**Instructors:** Larry Murdoch, Room 337; 656-2597; [lmurdoc@clermson.edu](mailto:lmurdoc@clermson.edu)  
Rex Hodges, Room 342; 656-1051; [rhodges@clermson.edu](mailto:rhodges@clermson.edu)

**Office Hours:** by appt

**Textbook:** (recommended but not required) A Manual of Field Hydrogeology, Laura Saunders, 1998. Additional reading material will be provided.

**Objectives:** The objectives of this course are to give the student a working knowledge of the methods and concepts of field hydrogeology, and to use those methods to understand several hydrogeologic settings. Another objective is to introduce you to a variety of practicing hydrogeologists and scientists in related fields.

**Prerequisites:** GEOL 408/608 or permission of instructor.

**Approach:** The course will be taught by reviewing principles and methods in the classroom, and then practicing those methods in the field. The first three weeks will be spent doing field exercises locally. We will make two trips out of town, one to the Mammoth Cave area in Kentucky, and the other to eastern South Carolina. A detailed schedule is given on the following page.

Many of the projects will involve collaborating with others in a group setting. This is necessary because some of the methods, like surveying, cannot be done individually. Also, it is often helpful to work with others while learning a new technique.

**Time Expectations:** Field camp will represent a significant time commitment. You should be prepared to meet at 8:30 and to be in the field until dark. We will make an effort to return from the field considerably before dark on most days, particularly when we are in town. Nevertheless, circumstances will require us to be out late for some activities.

When we are out of town, we will also try to end the exercises before dark. Circumstances may require late hours particularly when we are out of town.

**Food and drink:** Always bring your lunch if you want to ensure that you have something to eat during day. We may have an opportunity for you to buy lunch, but you should not count on it. **Always bring enough water**, or other non-alcoholic beverage, for you to be comfortable during a full day in hot weather.

**Grading:**

Field notebook	0.1
Homework/reports	0.5
Quizzes	0.3
Participation and attitude	0.1

Attendance: It is important to attend every day of field camp. If you must miss a day, then you should let the instructors know in advance. Missing class without a valid excuse will incur a penalty of up to 1 letter grade per absence.

**EQUIPMENT**

The following is a list of equipment that you will need, or is recommended, for field camp. Some items are available locally. Other items can be ordered. Ben Meadows and Forestry Suppliers carry the items, as do a variety of other companies. The product codes for some of the suggested items are given below. The websites for those suppliers are listed below, and the catalogs are available in 337 Brackett.

[www.benmeadows.com](http://www.benmeadows.com)

[www.forestry-suppliers.com](http://www.forestry-suppliers.com)

*Please have the items listed below on the first day of class.*

**FIELD EQUIPMENT**

**Field notebook:** You will need a bound book with lines and graph paper. The bookstore has some, also Forestry Supplier, 49352, \$5.95

**Compass:** You will need a compass that has a sighting mirror and an inclinometer. Here are several that will work. Get the Brunton if you can afford the extra \$.

- Suunto MC-2, Ben Meadows 101884 \$36.50
- Silva Ranger, Type 15, Ben Meadows 101924 \$44.95
- Brunton, Eclipse Model 8099, Forestry Supply 37400 59.99

A Brunton pocket transit will also work well, but they are considerably more expensive than the compasses listed above.

**Clipboard:** Conventional clipboard will be satisfactory. A clipboard with a cover is preferred, and one that will store extra sheets (Forestry Supplier 53190) is even better.

**See-thru ruler and protractor:** This is both a ruler with parallel lines and a protractor. It is handy for drawing maps. Get a few of them, they are useful and cheap. Should be available at Clemson Variety and Frame, or at Forestry Supplier, 47161, or 47420. \$1.50

**Engineer scale:** Available at Bookstore or Clemson Variety and Frame Forestry Supplier, 45972, \$5.25

**Graph paper:** 5 or 10 squares per inch

**Calculator:** something to do simple calculations in the field

**Hand lens:** Available at Bookstore, the one you have from mineralogy would be fine.

**Digging implement:** Small shovel, trowel or scraper to expose soils or sediments.

*These items are recommended, but not required*

**Watch:** inexpensive digital watch with stopwatch capabilities

**Multi-tool or Swiss Army knife:** One of these types of tools is helpful for many applications in the field

**Colored pencils:** useful if you already own them

**Rock hammer:** useful if you already own one

**Acid bottle:** useful if you already own one

**Grain-size chart:** We will provide one, but bring yours if you have one

### **PERSONAL EQUIPMENT**

We will be outside in a variety of conditions and you should have the appropriate clothing and equipment to take care of your personal comfort. Shorts and a T-shirt will be fine for most days, but long pants are recommended for some situations. It is probably best to avoid wearing sandals because they can be uncomfortable in tall grass and on uneven terrain. These things will be useful during some of the activities:

- Boots with ankle support
- Rubber boots, waders or some type of footwear you can get wet and/or muddy
- Work gloves
- Knee Pads. These will be helpful while caving
- Sunscreen
- Insect repellent
- Rain gear
- Field backpack
- Water bottles
- Hat