

**GEOL 303/EVPP 503 FIELD MAPPING TECHNIQUES  
FALL 2006**

Instructor: Rick Diecchio, 3040 David King Hall, 993-1208, [rdiecchi@gmu.edu](mailto:rdiecchi@gmu.edu)  
Meetings: Tuesdays, 12 noon – 5:45 pm, David King Hall 2074

**Course objectives:** to enable you to make field measurements using different techniques, to assess the precision and accuracy of the measurements, to convert the measurements to a map, and to assess the precision and accuracy of the map.

<u>Date</u>	<u>Topic</u>
29 Aug	Safety, equipment, precision & accuracy, trigonometry review, significant figures
5 Sep	Compass measurements
12 Sep	Exercise 1, intro to compass mapping (due today)
19 Sep	Exercise 2, compass mapping (due 3 Oct)
26 Sep	Exercise 3, maps & aerial photos (3 Oct)
3 Oct	MEET AT MANASSAS BATTLEFIELD Exercise 4, compass mapping on basemap, due 17 Oct
17 Oct	Introduction to the transit.
24 Oct	Exercise 5, transit map, total station (due 31 Oct)
31 Oct	Introduction to the alidade.
7 Nov	Ex. 6, plane table & alidade practice (due today)
14 Nov	Exercise 7, plane table mapping (due 8 Dec)
21 Nov	continue Ex. 7
28 Nov	Global Positioning System (GPS), differential correction. Exercise 8 (due 8 Dec)
5 Dec	Complete exercises 7 & 8
12 Dec	FINAL EXAM, 12 noon

<b>Grading:</b>	Ex 1 ... 10 pts	Ex 4 ... 25 pts	Ex 7 ..... 25 pts
	Ex 2 ... 25 pts	Ex 5 ... 10 pts	Ex 8 ..... 15 pts
	Ex 3 ... 15 pts	Ex 6 ... 5 pts	Final Exam 25 pts

Projects are due on the dates designated. If submitted late, your grade will be reduced by 1 point for each day after the due date. Projects that receive a low grade may be repeated, and re-submitted by 5 Dec. However, the maximum possible score for repeated labs will be half the difference between the original grade and the maximum possible grade. When resubmitting exercises, be sure to include the entire original submitted project. Everything is due by 5 December.

The 5:45 pm quitting time each day is only approximate. On classroom days, we will finish earlier. On field days, the time you finish will depend on several factors: weather conditions, preparedness, understanding of the procedures, and your own work habits, organization, and efficiency.

**Necessary field equipment:**

* water repellent field book	protractor	sunscreen
clipboard with cover	graph paper (10/in x10/in)	bug repellent
* pencils (harder than 2)	calculator (w/ trig functions)	rain gear
* waterproof, thin-point ink pen	field boots or sturdy shoes	water bottle
+* engineers scale	hat	snacks

\* may be purchased at Sesco, on Route 50 at Fairfax Circle. Tell them you are in the class and they will give you a discount.

+ An engineer's scale is graduated in 10ths, 20ths, 30ths, 40ths, 50ths, 60ths of an inch. A scale graduated in 1/2s, 1/4s, 1/8s, 1/16s, etc. of an inch is NOT adequate.

**For each exercise, please hand-in the following:**

- a legible copy of your field notes (do NOT submit your field book, and do NOT prepare a separate clean set of notes)
- your field map
- a final, drafted copy of the project if necessary
- a 1 page list of the sources of error, and an estimation of the amount of error due to each source. In other words, tell me how accurate and/or how precise your map is, and why.

Projects will be graded on the basis of: completeness, accuracy, error analysis, and presentation. Most likely, the more care you take in preparing your maps, the more accurate they will be, and the better your grade will be.

Departmental field equipment will be checked in and out as needed. You are personally responsible for any equipment checked out in your name. Please treat the equipment as if it were your own. All equipment must be turned back in when the project is due. Final grades will not be assigned to anyone who has not returned all field equipment.

Students with a disability should submit paperwork from the Disabilities Support Office no later than 12 September. Reasonable needs will be accommodated to the extent possible.

**Rules for field work:**

1. **SAFETY FIRST.** Never work alone, especially in rugged terrain or isolated places. Never do something if you do not feel is safe. Always tell someone where you will be, just in case you don't return. Wear proper field clothes. Drink plenty of fluids and keep yourself nourished. Try to be in your best physical condition. Always keep your wits about you.

2. **COME PREPARED.** Have the proper equipment, and be sure it is in proper working order. Know beforehand what you are supposed to accomplish, and be familiar with the techniques involved.

3. **WORK EFFICIENTLY AND BUDGET YOUR TIME.** Develop a way to do your fieldwork in a comfortable, but efficient manner. Keep in mind there is a limited amount of time in which to complete the project.

4. **PLOT YOUR RESULTS IN THE FIELD.** Get in the habit of collecting data, calculating, compiling, and plotting results while at the field site. This is the only way you can accurately check your work. This may save you from making unnecessary trips back to the field.