

Field Techniques

(GRG 373F)

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<http://uts.cc.utexas.edu/~wd/courses/373F/fttech.html>

Created by William E. Doolittle in 1996 and updated continuously.

Thanks to Peter H. Dana and Shannon L. Crum

Description, Enrollment, Instructor, Materials, Equipment, and Grading

Course Description

Geographers sitting in their offices frequently find themselves lacking the right type of data to deal with a specific problem at hand. This is the case for practitioners holding a bachelor's degree and working in the private sector as well as for academicians holding doctoral degrees and teaching at comprehensive research universities. For example, a geographer employed by a firm designing a retirement community may be faced with a problem such as assessing a series of possible sites on which to build the swimming pool. Maps and aerial photographs may be available, but do they contain sufficiently detailed information about the soils, geology, slope, vegetation, hydrology, and cultural features such as historic structures, wells, fences or walls? And, how are these items or conditions spatially distributed in absolute terms and relative to each other? Or, consider a scholar investigating the expansion cacao cultivation in the rainforests of southern Brazil. How does she or he distinguish fields from forest? Cacao, after all, is a tree which grows in the shade of taller trees, and, accordingly, farmers do not clear-cut the forest before planting their crop. And, what about the composition(s) of the "natural" environment(s) and that (those) of the fields? What about the sizes and shapes of the fields, and socio-economic characteristics of the farmers? The only way to get these data are to go into "the *field*," and to use certain *techniques*.

This course introduces advanced geography students to a number of various techniques used in gathering field data. It does not deal with every technique nor does it go into great detail on any one. It does, however, offer the basics of certain types of data collection, and, in so doing, it provides a foundation on which more advanced study--either formally through other classes, or informally through self-training--can be undertaken.

The course is divided into *two parts*, each dealing with different types of techniques, and each with different levels of supervision. The *first part* of the course deals with *mapping*, the most fundamental of geographic activities. Students learn how to collect data with a clearly spatial dimensions. They begin by using some very simple instruments and progress to using the latest electronic surveying equipment. Emphasis is placed on mapping small areas largely because data at this scale are usually what geographers do not already possess, and, therefore, need. Also, working at this scale gives students a first-hand appreciation for, or at least a "taste" of, the processes involved in collecting data portrayed on existing maps of various scales. Instruction during this first half of the semester is very focused; students are closely *supervised*.

The *second part* of the course focuses on the collection of various types of *environmental data* that can be mapped. Emphasis here is placed on both "natural" data used most often, but not exclusively, by so-called "physical geographers," and "cultural" data commonly used by so-called "human geographers." Also, techniques for determining past as well as current conditions are covered in order for students to assess changing geographies. Instruction during the second half of the semester is less supervised than in the first half. Students are given a great deal of *liberty* to hone their skills at making **professional judgements**.

The focus of this course is on landscapes, especially those that are material and visible. Instruction includes some classroom lectures and several outdoor exercises. This course involves hands-on experience. Students can expect to be hot, cold, dirty, and wet, and exposed to some health risks. Research methods, project formulation, laboratory data analyses, and cartography are *not* be part of this course. This course deals exclusively with outdoor data collection techniques.

Enrollment Information

This course is offered every fall and the spring semester of even numbered years (e.g., 2012).

Course number: GRG 373F

Unique number: 37925

Meeting time: MWF 12:00-1:00

Meeting room: CLA 3.102

Prerequisite: Upper-division undergraduate standing, *and* departmental permission.

Given the nature of this course and related equipment, enrollment is *limited to 16 students, maximum!* This course satisfies one-half of the Department of Geography's core curriculum requirement in Methods and Techniques for undergraduate majors. Enrollment priority is based on (1) geography majors in the Methods and Techniques track, (2) graduating seniors majoring in geography, (3) other students majoring in geography, (4) all other students.

A word of caution about 1 pm classes: Students may find it desirable *not* to schedule any classes for the 1:00-2:00 pm time slot. Much of our work will be outdoors, rain or shine, hot or cold. Leaving the following hour free allows for students to shower and change clothes before attending their next class.

Instructor Information

Instructor: William E. Doolittle

Office: CLA 3.704

Hours: by appointment via email

email: dolitl@austin.utexas.edu

Teaching Assistant: Christine Bonthius

email: cmbonthius@gmail.com

Supplies Needed

Each student will need:

1. Two paperback, spiral-bound Engineers' Field Books [e.g., Forestry Suppliers Transit Field Book #FB382]--**NOT** expensive hardback models or stitched models
 2. One small plastic protractor that can also be used as a ruler
 3. One small drafting compass
 4. One camera (the one in your mobile phone will work)
 5. A pocket calculator (the one in your mobile phone will work)
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Equipment

Various pieces of equipment, such as measuring tapes, Brunton Pocket Transits, and soil corers, will be used in this course. Students need not purchase these items as they can be somewhat expensive. Instead, students will be able to check-out equipment from the instructor when needed.

Basis of Grading:

This is **not** a correspondence course! **All** students are expected to **attend** every class period, *and*, **have read** the appropriate Course Notes, and perhaps some of the Suggested Additional Readings, ahead of time.

This is also not strictly a lecture course. All students are expected to be *active participants*.

Students will treat this course as though it were professional employment. They will treat the professor as though he were their employer. And, they will treat each "job" or exercise as though it were a professional assignment or task.

Every job will be due on the assigned day and time, usually at 3 pm of the Field Day following initiation of the job. **Jobs will NOT be accepted late.**

Each job will be graded on the following ten criteria:

- (A) Layout: title and information box, use of tabular pages, use of graphics pages;
- (B) Appearance: legibility, contrast/pencil, lines and lettering, overall neatness;
- (C) Data: sufficiency/extraneousness, accuracy/calculations;
- (D) Overall quality.

This is a course designed specifically for advanced undergraduates majoring in geography who anticipate that one day they may need to gather data first-hand. Accordingly, all students are expected to be *mature, industrious, highly self-motivated, and enthusiastic*.

Assigned work will involve several jobs or exercises to be completed in small groups, often outside

of class hours, and usually within one week of when they are begun. Each student will be responsible for recording job data in his or her own field notebooks. Students will record job data in one book while the instructor is grading the previously completed job recorded in the other. Each student will maintain a photographic record consisting of two photos of each job. One photo will be of the student actively working, and one will be of a topical nature, illustrating some aspect of the job. Toward the end of the semester an album will be prepared with complete captions. The albums will be graded as one exercise.

Course Notes and Suggested Additional Readings constitute part of this course. A comprehensive final examination covering the Course Notes, material presented in class, and lessons learned during the jobs will be administered at the end of the semester.

- Participation (attendance, enthusiasm, and continuous improvement) 25%
- Completion of, and performance on, jobs (exercises) 50%
- Final examination 25%

Academic honesty: All students are expected to comply with the [University of Texas Honor Code](#).

Special Accommodations

Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, [Services for Students with Disabilities](#), 471.6265

Religious holidays. According to UT policy, students must notify professors of their pending absence at least 14 days prior to the date of observance of a religious holy day. Students missing a class or examination because of a religious holy day will be given an opportunity to make-up missed work.

<http://uts.cc.utexas.edu/~wd/courses/373F/general/descrip.html>

Created by William E. Doolittle. Last revised 12 December 2013, wed

Tentative Schedule

Spring 2014

January	13	M	<u>Introduction</u> <u>Before Heading Out</u>	
	15	W	<u>Base Maps and Aerial Photographs</u>	
	17	F	<u>Recording Data</u>	
	20	M	Holiday: no class meeting	
	22	W	<u>Measuring Distances</u>	<u>Job 1</u>
	24	F	Field Day	
	27	M	<u>Tying-into a Baseline</u>	<u>Job 2</u>
	29	W	Field Day	
	31	F	<u>Tying-into a Datum by Triangulation</u>	<u>Job 3</u>
February	3	M	Field Day	
	5	W	<u>Brunton Pocket Transit (compass)</u>	
	7	F	<u>Tying-into a Datum by Azimuth</u>	<u>Job 4</u>
	10	M	Field Day	
	12	W	<u>Conducting a Traverse</u>	<u>Job 5</u>
	14	F	Field Day	
	17	M	<u>Hand Leveling</u>	<u>Job 6</u>
	19	W	Field Day	
	21	F	<u>Vertical Distances (clinometer)</u>	<u>Job 7</u>
	24	M	Field Day	
	26	W	<u>Total Station</u>	
	28	F	Total Station	*
March	3	M	Total Station	*
	5	W	Total Station	*
	7	F	Reality Check: no class meeting	
	10-14	MWF	SPRING BREAK	
	17	M	Reality Check: no class meeting	
	19	W	<u>Sampling Procedures</u>	<u>Job 8</u>
	21	F	Field Day	
	24	M	<u>Describing Soils</u>	<u>Job 9</u>
	26	W	Field Day	
	28	F	<u>Measuring Erosion</u>	<u>Job 10</u>
	31	M	Field Day	
April	2	W	<u>Hydrology</u>	<u>Job 11</u>

	4	F	Field Day	
	7	M	Field Day	
	9	W	Prof Conf: no class meeting	
	11	F	Prof Conf: no class meeting	
	14	M	<u>Vegetation</u>	<u>Job 12</u>
	16	W	Field Day	
	18	F	Reality Check: no class meeting	
	21	M	<u>Dendrochronology</u>	<u>Job 13</u>
	23	W	<u>Land Use and Landscape Analysis</u>	<u>Job 14</u>
	25	F	Field Day	
	28	M	<u>Cultural Imprints</u>	<u>Job 15</u>
May	2	W	Field Day	
	4	F	<u>Overview</u>	<u>Job 16</u>
	12	M	FINAL EXAMINATION 9am-noon	

*The class will be split into two groups of five, and one group of six students, so that everyone can get a first-hand experience working with the Total Station.

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