

## Course Syllabus\*\*

GENERAL INFORMATION

SPRING SEMESTER, 2003

Course Title: Land Surveying, Forestry 120 3 credits  
Required Text: Surveying, Jack McCormac, Fourth Edition  
Instructor: Steve Resh (full time)  
Office: Career's Building Room T-127  
Hours: Wednesday, 10:00 - 11:00, Thursday, 9:00 - 11:00  
Open door policy at all times.  
Phone: 301 784-5307 E-mail sresh@allegany.edu  
Class Times: Lecture, Wednesday and Friday 9:00 - 9:50 T-105  
Lab. Tuesday or Thursday, 12:30 - 3:30

\*\* Please note: Under extenuating circumstances, the instructor has the right to change any course provision or requirement during the semester.

### I. Purpose

A. Many resource management activities begin by identifying boundaries of ownership. The methods, equipment, documentation, and presentation styles of surveying will be introduced in this course so that these ownership boundaries may be determined. Types of measurements, leveling, traversing, construction surveying, mathematical manipulation of data, and map preparation will be stressed, as well as the changing nature of this profession. The use of Global Positioning System (GPS) equipment will be a component of this course.

Three credits Prerequisites - Math 104 or 107 or 119

B. Objective - This course should enable the successful graduate to properly perform the field tasks and necessary office and computer compilations that a surveyor or forest technician will be expected to undertake as a member of a surveying party or in assisting a landowner to locate his property.

### II. Course Policies

A. Attendance - Laboratory sessions are usually held in an outdoor field setting by students in groups. This makes it difficult or impossible to make-up a missed lab. Copied assignments, data or maps from labs where a student was absent will not be accepted. A three percent increase in the final grade will be awarded to any student that has had perfect attendance. One percent will be deducted from the final grade for each absence beyond the first. Being late two times will be counted the same as an absence. Late students will be marked as absent unless they request that the instructor make the change from absent to late on the record, after the class period.

B. Participation - Most surveying work is done as a part of a team. Therefore, one of the goals of forestry education is to teach the student how to be an effective part of a group. You will often work as part of a crew, and you are expected to do your fair share of the work. Failure to do so will have a negative impact on your final grade.

C. Grading - Three exams, each worth 20% of the final grade will be given during the course. A laboratory field test will be given which is worth 10% of the final grade. The remaining 30% will be determined from lab assignments, maps, and the quality of the field notebook. Instructions and grading criteria for these will be presented during the semester. Final grades will be assigned based on the percentage of the total possible points earned in the class. Those who earn 90 to 100% of the points possible will receive an "A" in the course, those who earn between 80 - 89% of the points will receive a "B" etcetera.

**Students in the Forest Technology curriculum are required to earn at least a "C" in this course in order to graduate.**

D. Extra Credit - All homework assignments may be neatly completed and handed in for extra credit two weeks before the test is given which covers the material. There is no other formal method available to earn extra credit in this course. If an innovative project can be devised by the student, extra credit might be a possibility.

E. Help Sessions - I would be glad to give extra help to any individual or group of students who seek it. I consider it a sign of intelligence and of good study habits to ask for help.

F. Acceptable format of assignments - Neatness is of paramount importance in surveying. Maps and field books are partially graded on the basis of neatness!

G. Assignment deadlines - Assignments are usually due two weeks from the day they are made. Exceptions to this policy will be announced.

H. Plagiarism and Cheating - Using someone's work without properly citing that individual is dishonest. Anyone who copies information, assignments, maps or test answers from another individual will be dropped from the class. Persons allowing information to be copied from their papers will receive a zero grade on the assignment or test.

I. Exams - Examination dates will be announced at least one week in advance. Make-up exams will be given only in the case of an illness, and then only if the instructor is informed **before** the exam.

III. Course Requirements

A. Course Content

Lecture Topic (followed by appropriate section from McCormac)

Definition of Surveying (1-3) History of Surveying (1-2) Types of surveys (1-4..1-6) Safety (1-12).

Introduction to Measurements, all material from chapter 2,

Introduction to Distance Measurements, (all chapter 3 **except 3-4**)

Distance Correction, chapter 4. **Omit 4-4, 4-6, 4-7, 4-10.**

Angles and Directions, all chapter 9.

Test # 1

Introduction to Leveling, all chapter 6.

Differential Leveling, all chapter 7. **Omit 7-4, 7-5.**

Leveling, Continued, **Omit 8-5.**

Topographic Surveying, all chapter 14. **Omit 14-4..14-12, and 14-14.**

Basic area determination. **Only section 12-3 and 12-13**

Test # 2

Coordinates and Map Projections. Section 16-7

The Global Positioning System (GPS). chapter 15

Measuring Angles and Directions With Transits, Theodolites, and Total Stations, chapter 10. **Omit 10-12..10-17.**

Miscellaneous Angle Discussion, chapter 11. **Only include 11-1..11-6**

Traverse Adjustments and Area Computation, chapter 12. **Up to 12-12 only.**

Land Surveying or Property Surveying, chapter 19.

Surveying-The Profession, chapter 22.

Test 3

Lab Outline

Topic

Week #

- 1..... Note keeping (chapter 3), horizontal distance, pacing.
- 2..... Chaining and slope correction, laying off a distance, breaking chain, care of chain.
- 3..... Use of hand compass, five-sided traverse.
- 4..... Drafting of five sided traverse, scale, area.
- 5..... Level setup and rod reading, trigonometry and topographic leveling.
- 6..... Differential leveling loop, allowable error, loop closure.
- 7..... Profile leveling and topographic mapping.
- 8..... GPS use, navigation, map coordinate systems and field planning.
- 9..... GPS Differential correction and mapping using

- Pathfinder Office Software
- 10..... GPS Data editing and transfer into a GIS
  - 11..... Field use of transits-set up and reading angles
  - 12..... Transit traversing.
  - 13..... Advanced drafting and area techniques.  
Using latitudes and departures, DMD and  
coordinate systems.
  - 14..... MS Survey, COGO, data correction,  
computer plotting.
  - 15..... Lab final

B. Library assignments - No library assignments are scheduled at this time.

C. Required reading - The chapters or sections in McCormac should be read in the order shown above before they are covered in class.

D. Recommended readings - Recent issues of Professional Surveyor magazine are kept in the forestry reading room. Serious students should consider reading articles from this journal.

E. Supplemental resources - Students will be required to purchase an approved field notebook, drawing equipment, and drawing paper. A calculator that will do trigonometric functions as well as convert from degrees decimal to degrees minutes and seconds and vice versa is extremely helpful. This course is supplemented by providing resources on Blackboard at [blackboard@allegany.edu](mailto:blackboard@allegany.edu)

F. Safety and Equipment. Surveying labs will be completed on campus. Please be aware of automobile traffic and respect the equipment at all times.