

## **Dakota College at Bottineau Course Syllabus**

**Course Prefix/Number/Title:** ENVT 110 - Introduction to GPS

**Number of credits:** 2

### **Course Description:**

The Global Positioning System (GPS) is a system of hardware, software, and procedures designed to support the capture, management, manipulation of spatially referenced data for solving complex planning and management problems. GPS applications use data collectors to locate positions and to guide navigation.

This course covers GPS applications related to recreation, navigation and engineering.

**Pre-/Co-requisites:** None

### **Course Objectives:**

Successful completion of this course enables students to:

- . Demonstrate ability to use handheld GPS units.
- . Demonstrate ability to collect data in the field for use in computer applications.
- . Be able to understand and describe the range of applications of GPS
- . Discuss what GPS is in terms of its components and functionality
- . Identify the components of the GPS system and sources of data discrepancies
- . Plan, prepare, and carry out a GPS based data collection
- . Demonstrate ability to use a standard GPS unit.

**Instructor:** Ken Cabarle

**Office:** NSC 113

**Office hours:** M, T, W 10:00-10:50, W, 2:00-2:50; by appointment

**Office phone:** 701-228-5493

**E-mail:** kenneth.cabarle@dakotacollege.edu

**Lecture/Lab Schedule:** 9:00 - 9:50 AM on M, W

### **Textbook(s):**

None

**Course Requirements:** Students are required to complete in class assignments, answer quiz questions, complete lab assignments where they collect data and answer questions regarding GPS applications in the real world.

Grading Scale: The grading scale is listed below.

Percentage Grade

90 - 100 A

80 - 89 B

70 - 79 C

60 - 69 D

< 60 F

Tentative Grade Allocation:

In class assignments ~ 100

In class quizzes ~200

Projects ~200

Total of 600 possible points for the course.

**Tentative Course Outline:**

1. An overview of Global Positioning Systems (GPS)
2. GPS hardware
3. GPS terminology
4. Data collection; sources, accuracy and error propagation
5. GPS segments and structure
6. Map projections, datums, coordinate systems, structures and scale
7. Review of current GPS issues and events
8. Integration of Global Positioning Systems (GPS) field measurements into GIS databases
9. Legal issues concerning GPS data collection
10. Data transfer/exchange from GPS to the computer

**Student E-mail Policy:**

Dakota College is increasingly dependent upon e-mail as an official form of communication. A student's campus assigned e-mail address will be the only one recognized by the campus for official mailings. The liability for missing or not acting upon important information conveyed via campus e-mail rests with the student.

**Classroom Policies:**

All students will respect the classroom environment which will allow for maximum interaction between students and the professor.

**Lab policies:**

Labs in this class are a privilege. Violation of school procedures regarding student conduct will not be tolerated. Many of the labs are all day field trips and you will be exempt from other

classes. However, this does not exempt you from the work that is missed for those classes. All missed work from classes missed because of lab will be made up per arrangements with the other instructors. Students that violate this will miss out on future field trips. Labs are repeated around the same time each year.

**Academic Integrity:**

All students will do their own, original work on reports, laboratory assignments, and essays. Any student caught cheating on an exam or quiz will be reprimanded the first time. If it happens again, the student will drop the class.

**Disabilities and Special Needs:**

Please inform the professor within the first week of classes if any assistance is required due to disabilities or special needs.