

**School of Arts & Science
Environmental Technology**

**ENVR 202 – Geographic Field Techniques.
Spring 2004**

COURSE OUTLINE

The Approved Course Description is available on the web @ _____

⌘ Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for your records.

1. Instructor Information

This course has two somewhat related but totally different modules, taught by two different instructors. The modules are: orienteering by Bruce and Global Positioning Systems (GPS) by Greg.

(a) Instructors Bruce Hardy, Camosun, and .
Greg W. Keel P.Eng., Parallel Geo-Services Inc.
390 Elizabeth Street, Nanaimo, BC, V9R 3C6, Canada
Phone/Fax: (250) 753-0050, email: gkeel@nanaimo.ark.com

(b) Office hours TBA

(c) Location: Classroom = F334; Office = F344d. Also, in the field.

(d) Phone: 370-3423. _____ Alternative: 370-3432.

(e) E-mail: hardy@camosun.bc.ca; gkeel@nanaimo.ark.com

(f) Websites:

Orienteering = <http://webct.camosun.bc.ca> (requires guest password for ENVR 2XX)

GPS =

<http://www.fcsn.bc.ca/index.cfm?fuseaction=catalogue.description&descriptioncode=IN0011&CFID=3079670&CFTOKEN=47344626>

2. Intended Learning Outcomes

ENVR 202 consists of two modules, taught by different instructors.

(a) Orienteering, taught by Bruce Hardy.

(b) GPS (Global Positioning Systems) taught by Greg Keel.

The approved course description says:

ENVR 202 Geographic Field Techniques. This course provides training in Global Positioning Systems (GPS) and in orienteering as means of determining "position" of objects in the environment.

(A) The outcomes and objectives for Orienteering are as follows, pasted directly from the student handout:

Outcomes: This module is complementary to the “Survival” module. There will be some overlap and reinforcement between the two. However, “Survival” will emphasize emergency situations, whereas this emphasizes avoidance of those emergencies.

Upon successful completion of this module, you should be able to

1. Assess for potential risk in relation to a wide variety of outdoor situations and conditions.

- Identify the order of critical concern for each of the following: food shortage; falling body temperature; shortage of oxygen; loss of blood; broken limb bone; spinal column or skull injury.
- Identify the potential hazards inherent in exposed ocean water or shore, flat featureless forest terrain; non-technical mountaineering; winter wilderness camping; and any hiking.

2. Plan in ways that minimize risk and maximize preparedness when getting ready for a non-motorized land expedition away from immediate aid.

- Identify five important items to take on a land expedition away from immediate aid, and explain why these items are important.
- Identify other important preparatory steps, including
 - telling people of your route and expected arrival time, and.
 - being careful to know where you are starting from and knowing where you are at all times.

3. Use a variety of methods to accurately find your location and navigate in a wilderness.

- Accurately use the sun for navigation.
- Describe and apply three techniques which can be used to navigate in the woods if the sun is not showing and you don't have a compass or map.
- Use contours on a map for navigation, paying special attention to the map scale.
- Accurately convert the scales on various maps to real distances.
- Accurately determine the average distance of your normal pace, to the nearest 0.1 metre.
- Accurately use a compass to find your location and to navigate, including:
 - convert back and forth between geographic and magnetic directions.
 - identify the amount of declination (variation) at any location and time.
 - define magnetic deviation, and state some sources of deviation.
 - demonstrate or explain how to site and measure with a Suunto or other compass.
- Locate yourself on a contour map by sighting on two separate known locations.
- Interpret a prescribed course on a map and follow it successfully to an unknown destination.

(b) The outcomes and objectives for the GPS module are as follows:

Greg writes: “I pasted a link to the FCSN web page which gives a very basic description of the 2 day GPS Field Operators course. One of the course modules deals with GPS navigation, and the students do a short field exercise to support this as well. I suspect this will be complimentary to the Orienteering module.”

The course focus is on the understanding of basic GPS concepts to support good field practices for resource-level mapping applications. The course is made-up of 7 modules:

Introduction (9 pages)

- 1) GPS Basic Concepts (38 pp)
 - 2) GPS Data Capture Concepts (30pp)
 - 3) GPS Data Capture I (Trimble equipment-specific) (24pp)
 - 4) GPS Data Capture II (Trimble software-specific) (26pp)
 - 5) Navigation with GPS (8pp)
 - 6) Basic Geodesy (10pp)
 - 7) GPS Positioning Techniques (14pp)
- and 3 Appendices: (Acronyms, Glossary, and Units of Measure)

3. Required Materials

(a) Orienteering

- (a) Texts: none.
- (b) Other:
handouts, which are provided.
Field materials, including maps, compasses and tape measures.

(b) Global Positioning Systems:

- (a) Texts: none.
- (b) Handouts = large manual.
- (c) Equipment: Two types of GPS units which students have on loan.

4. Course Content and Schedule

A. Orienteering has a classroom component and a field component.

The classroom component is based on the handout, and is illustrated by a Powerpoint presentation. There is also practice with compasses and maps.

The field component consists of two parts:

- in the morning, students go for a walk, with the instructor, in trail-less woods, practicing direction finding, plus observing contours, terrain and vegetation. They also learn a few basic principles of survival.
- In the afternoon students, in groups of 2-4, are taken to a specific starting place, then follow a map course through unknown woods to an unknown destination on the other side of the woods.

B. GPS has a combination of classroom instruction and practice, and some field applications, over a two-day period.

(Can include: Class hours, Lab hours, Out of Class Requirements and/or Dates for quizzes, exams, lecture, labs, seminars, practicums, etc.)

5. Basis of Student Assessment (Weighting)

(Should be linked directly to learning outcomes.)

A. Orienteering:

1. Field activities =

- (a) a morning walk in which students practice applications of contour maps, interpreting directions and topographical trends, and limited survivor first aid.
- (b) A late afternoon walk in which students are dropped off at an unknown

location and required to follow a course on a topographic map, in order to reach an unknown destination.

2. Assignments: There is a one-page worksheet to fill out and have marked as a result of the morning walk.
3. Exams: There is a short written test prior to doing the afternoon hike.

B. GPS:

Students are evaluated based on a practical test in which they must demonstrate correct GPS field data collection techniques. Each student collects their own file at the end of day #2, and this is evaluated by the instructor.

6. Grading System

(If any changes are made to this part, then the Approved Course description must also be changed and sent through the approval process.)

(Insert appropriate approved grading system – see last page of this template.)

The following percentage conversion to letter grade will be used:

A+ = 95 - 100%	B = 75 - 79%	D = 50 - 59%
A = 90 - 94%	B- = 70 - 74%	F = 0.0 - 49%
A- = 85 - 89%	C+ = 65 - 69%	
B+ = 80 - 84%	C = 60 - 64%	

7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College Calendar, Registrar's Office or the College web site at <http://www.camosun.bc.ca>

ACADEMIC CONDUCT POLICY

There is an Academic Conduct Policy. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, Registration, and on the College web site in the Policy Section.

www.camosun.bc.ca/divisions/pres/policy/2-education/2-5.html