



**Summer Course Description
July 30 - August 10, 2007
University of Alaska Fairbanks**

MapTEACH (Mapping Technology Experiences with Alaska's Cultural Heritage) is a culturally responsive geoscience education program for middle- and high-school students and teachers in Alaska that emphasizes hands-on experience with spatial technology, including GPS (Global Positioning System), GIS (Geographic Information System), and remote sensing imagery. The curriculum uses exclusively Alaskan data and examples. It has been piloted in two middle school and one high school classroom.

Course Description

Through a combination of lecture, discussion, computer lab time and field work, this course explores the new, standards-based MapTEACH curriculum focused on developing spatial technology skills within the context of geology and local knowledge. Students will gain hands-on experience with the use of GPS receivers, Macintosh-based GIS mapping software and air photo analysis to explore geologic and landscape topics and to create digital maps of scientific, cultural or personal significance. Course includes fieldwork with local landscape experts and geologists and is offered for a minimum of 3 credits with the option of 1 additional credit for classroom implementation of curriculum units in the fall.

Objectives:

3 credit course: (grades submitted August 2007)

- Learn to use GPS tools to acquire spatial data
- Learn to use dual-platform GIS software in a Mac OS 10.3 environment
- Explore flooding, erosion, permafrost and local landscape knowledge as a context for computer mapping
- Practice, review and evaluate MapTEACH curriculum lessons
- Leave with lessons; computer software and GIS data; maps and air photos of home community

4 credit course (grades submitted December 2007)

- All objectives above
- Implement at least one MapTEACH strand with students in classroom
- Assess and reflect on student learning and unit success and share these reflections with MapTEACH staff and course participants

Topic Outline:

- Mental Maps
- Place Names, Landmarks and Stories
- Satellite Images and Air Photos
- Topographic maps
- River Morphology, Erosion and Flooding
- Permafrost
- Using a GPS to Create Track and Waypoints
- Introduction to GIS and AEJEE
- Adding Locations in Latitude and Longitude
- Downloading GPS Data to AEJEE Map
- Using Data Sets for Community Planning
- Map Layout in AEJEE

- Hot linking to Photos, Text and/or Websites

Methods of Evaluation

Course graded on a pass/fail basis.

For 3 credit course: Evaluation will be based on: completion of pre and post survey of skills and knowledge; active participation and completion of all activities and assignments; creation and presentation of an original map.

For 4 credits: All of the above plus implementation and evaluation of at least one MapTEACH strand with students, submission of written evaluation to the instructors and participation in an audio-conference with other participants to share successes and suggestions for change.

Instructors

This course will be team-taught by MapTEACH instructors including: Sam Batzli, Geospatial Information Scientist, Environmental Remote Sensing Center, University of Wisconsin - Madison; Patty Burns and De Anne Stevens, Geologists with the Alaska Division of Geological & Geophysical Surveys; and Sidney Stephens, UAF Department of Natural Resources Management.