

**Survey Techniques II**  
**Survey Crew Chief**

PURPOSE:

The purpose of this course is to provide advanced preparation in field skills to *provide* the avocational archaeologist the *skills* to supervise small survey teams in service projects for the Arizona Archaeological Society (AAS), and to provide assistance to the professional community, as may be requested.

PREREQUISITES

- A. Prerequisite classes are Survey Techniques I, plus either Ceramic
- B. Identification or Lithics Analysis, or similar experience as approved by the instructor.

OBJECTIVES

- A. At the completion of this course, the student shall be able to:
- B. Determine area to be surveyed
- C. Conduct "Desk top survey" (Pre-survey research)
- D. Determine appropriate survey strategies
- E. Be knowledgeable about Pre-Survey Techniques-Remote Sensing Technique
- F. Layout survey areas.
- G. Take detailed, accurate and concise notes on every aspect of the archaeological survey.
- H. Plot Universal Transverse Mercator locations of recorded archaeological sites on the U.S.G.S. field and project maps
- I. Be knowledgeable of the Geographic Information System (GIS) and its use in predictive modeling.
- J. Be familiar with the *iPAQ* , TDS Recon, Penmap system, and other systems of gathering survey data.
- K. Input appropriate data in computer.
- L. Integrate photography, mapping, and note taking into a system that will enable the crew chief to interpret the meaning of site location, subsistence strategies and artifact interpretation.

- M. Prepare a draft site report or part thereof, in acceptable format for agencies.
- N. Apply appropriate requirements of the Antiquities Act of 1906 and the additions to this act throughout the years, i.e. NAPA, ARPA, NAGPRA, NHPA.

#### COURSE FORMAT

- A. The student is to receive a minimum of 20 hours of classroom instruction, coupled with 40 hours of actual fieldwork. Within the fieldwork requirements, the following conditions must be met.
- B. Student crew chief is to be aware of the personalities and knowledge level of his or her crew.
- C. The student crew chief is to be able to determine the best sampling strategies for an archaeological survey in plateau, mountain and desert settings.
- D. The student crew chief will develop a survey database for recording all the pertinent records during the survey.
- E. The fieldwork requirements will be fulfilled by directing a crew of at least two for a minimum of 30 hours. The remaining field hours will be fulfilled through a variety of tasks: input all daily records into the computer data base; maintain daily logs; plot sites recorded on permanent field maps; maintain and keep up to date all photographic records; be responsible for and maintain all equipment used by crews; be responsible for a portion of the draft report.
- F. The draft report or parts thereof, along with the completion of all written and administrative work assigned, coupled with the instructors evaluation of both student's classroom and field work, determine the student's successful completion of this course.

#### RECOMMENDED ELECTIVE TEXTS

- A. Hester, Thomas R. *Field Methods in Archaeology*, Mayfield Publishing Co., Mountain View California.
- B. Collins, James M. and Brian Leigh Molyneaux. *Archaeological Survey*. Altamira Press, Walnut Creek, California.

#### MATERIALS NEEDED:

- A. Recommended equipment
  - 1. GPS
  - 2. Vernier calipers, mm designations
  - 3. Compass with adjustable declination
- B. For Your own use
  - Camera- digital or standard

#### COURSE OUTLINE

- A. Determine area to be surveyed
- B. Desk top survey"
  - 1. Studying published information
  - 2. Previous find spots
  - 3. Building surveys
  - 4. Old maps and documents (BLM Reading Room)
  - 5. Existing site files
    - a. BLM Reading room
    - b. Local archives
    - c. University of Arizona site Files
    - d. Arizona State University site Files
    - e. Local National Forest Service
    - f. Museum of Northern Arizona site files
  - 6. Existing aerial photographs
- C. Determine appropriate survey strategies
  - 1. What are you trying to learn?
    - a. Culture Resource Management
    - b. Academic pursuits. i.e. problem oriented
  - 2. Survey phases
    - a. Reconnaissance survey
    - b. Intensive survey
    - c. Class I, Class II and Class III
  - 3. Probabilistic sampling strategy
    - a. Simple random sample
    - b. Judgmental sampling

- c. Pros and Cons of each strategy. Results of practical application
    - d. Determine the percentage of the area that will give you a good sample
  - 4. Layout of survey areas/Establishing the grid
- D. Remote Sensing Techniques/Understanding their function
  - 1. Geophysics
  - 2. Magnetometry
  - 3. Resistivity
  - 4. Ground Penetrating Radar (GPR)
  - 5. Aerial photography / LIDAR laser mounted on aircraft
- E. Pedestrian Survey Techniques
  - 1. Determining method - zig zag or straight
  - 2. Crew size
  - 3. Spacing considerations
    - a. Dense underbrush
    - b. Visibility
    - c. Which way do we go?
  - 4. Computer aided data entry
    - a. Geographic Information System (GIS)
      - (1) Its use in predictive modeling
  - 5. I-Paq and other total station surveying systems
    - (1) Pros
    - (2) Cons
- F. Site recording -- Crew Chief's responsibilities
  - 1. Development and use of analysis sheets
    - a. Ceramics
    - b. Flaked stone
    - c. Ground stone
    - d. Photography
    - e. Other
  - 2. Importance of notetaking
    - a. Field book / journals/ Daily Logs
    - b. Software: ArcPad for field notes
  - 3. Crew chief responsibilities
    - a. Instruct in use of forms and logs
    - b. Review crew logs
    - c. Computer data entry -- daily logs, site and analysis sheets
- G. Site mapping-- Crew chief responsibilities
  - 1. Deciding on method to use
    - a. compass and pace, compass and tape, Brunton tripod and tape
    - b. Instructing crew
  - 2. Plotting Universal Transverse Mercator locations
    - a. on the U.S.G.S. field maps
    - b. on project maps
  - 3. Updating project maps
  - 4. Software: ArcView

- H. Crew supervision
  - 1. Need for cooperation and team work
  - 2. Crew safety
  - 3. Communication with Field Director
  
- I. Interpreting survey data
  - 1. Integration of photography, mapping, and notes
  - 2. Site location
  - 3. Subsistence strategies
  - 4. Artifact interpretation
  
- J. Report writing
  - 1. Format
    - a. SHPO standards
    - b. Forest Service standards