1. Instructor: Wayne N. Clark, PhD/MPH; REHS; RHMS; IHIT  
   Office: McLane 249  
   Phone: 278-3061

2. Class Meetings: Thursdays in McLane # 176 (lab next door to department office)  
   Lecture: Thursday: 9:00 to 10:40 a.m.  
   Lab: Thursday: either 10:50 to 12:30 or 12:50 to 2:20 p.m.

3. Final Exam Schedule: Will be during lecture for theory and a lab practical also

4. Goals and Objectives: The goal of the class is to develop competency in sampling  
   and analytical procedures for chemical and biological materials found in water, food, and  
   industrial chemical/solvents as might be encountered in performance of duties in health  
   departments, water resource boards or industrial hygiene.

5. Prerequisites: Ideally students should have completed the following classes prior  
   to enrollment in the current HS 167 course: (a) microbiology with lab (b) inorganic  
   chemistry with lab (c) HS 161 and 162.

6. Texts: The following text and handouts are essential to the course, especially the lab.  
       Loveland, Colorado, USA. Available for purchase/loan in class, not bookstore  
   6-2. Clark, W. Readings and assignments for HS 167

7. Field Trips: We may make some campus visits to the swimming pool and/or  
   cafeteria. We may also go to Woodward Park or Lost Lake on the San Joaquin for  
   practical water studies. A trip through the sewage treatment plant on West Jensen Ave.  
   or Madera may be possible.

8. Grading: Grading will be based upon the following criteria:  
   8-1. Attendance in lecture and laboratory; it is hard to perform your work and submit  
       your written reports if you are absent from lab.  
   8-2. regularly scheduled exams over lecture and laboratory materials.  
   8-3. competency based testing (may be one-on-one with the instructor and/or lab  
       assistant) to show your understanding of equipment and logic of sampling, etc.  

   Testing and grading must be qualitative to some extent due competency basis.

9. Topic Sequence:  
   9-1. Water: basic physical and chemical properties of water including tests for  
       turbidity, salinity, dissolved oxygen, pH, alkalinity, hardness and specific ions.  
   9-1-1. consider differences between direct and indirect methods  
   9-1-2. consider differences between qualitative and quantitative procedures.
9-1-3. biological analysis: microbial analysis such as most probable number, plate counts, dissolved oxygen, presence/absence testing, paddle testers.
9-1-4. wastewater analysis: biological oxidation demand, suspended solids with inorganic vs. organic percentages.
9-1-5. swimming pools: chlorine, both free and total, oxidation-reduction demand.
9-1-6. drinking water standards

9-2. Food: basic microbiology of foods, both fresh, frozen and canned.
9-2-1. microbial plate counts: growth media, differential and selective
9-2-2. raw milk counts

9-3. Air: microbial air sampling with Andersen Cascade Impactor, the Gelman high volume samplers, etc.

10. Reference Books (available in Reserved Reading Room, CSUF Library)

Other books on specific subjects may be added to the list at appropriate time. Many of these will be from the American Public Health Association series or EPA NIOSH Manuals, etc.