Course Description
The course provides students with an opportunity to apply the principles and methods of risk assessment and analysis to "real world" problems of private and communities’ organizations. The course utilizes a student group project to elaborate the many dimensions of and possibilities for identifying and solving private and community environmental and occupational health/safety problems.

Course Objectives
By the end of the course the student will be able to:
1. Identify private and community environmental and occupational health/safety problems.
2. Design risk assessment instruments and identify resources used in determining the scope and magnitude of private and community environmental and occupational health/safety problems including potential educational interventions to resolve the problem.
3. Design a private and community environmental and occupational health/safety intervention plan based on data from objective 2., above.
4. Design/implement an evaluation plan to measure the effectiveness of the intervention designed in objective 3., above.

Class Project
All students will participate in an environmental and occupational health/safety intervention EOHS project. The project will be performed in a setting of the student's choice and will include the following activities:
1. Performing a risk assessment.
2. Designing and implementing a risk prevention program.
3. Designing and implementing an evaluation.

Reports
Four interim reports (report number #1 is worth 10% and the other three reports are worth 20% of your final grade) are due during the course of the semester. The complete project report (worth 15% of your final grade) is due at the end of the semester. Late papers will not be accepted with at least one week's prior approval. The reports and their due dates are as follows:

<table>
<thead>
<tr>
<th>TITLE</th>
<th>DUE DATE</th>
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<tbody>
<tr>
<td>1. Project Proposal</td>
<td>September 17, 2001</td>
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<tr>
<td>2. Background Information Report</td>
<td>October 08, 2001</td>
</tr>
<tr>
<td>5. Complete Project Report</td>
<td>December 17, 2001 (17:45)</td>
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Attendance and Class Participation
Fifteen percent (15%) of the final grade will be based on the individual student's class attendance, two (2) peer evaluations, and group contribution. Attendance is mandatory. Note that this makes it possible for individual students to achieve a grade higher or lower than their group grade.

Grading
Final grades will be assigned on the basis of the percentage of points earned to total number of points possible.

100 - 90 = A
89 - 80 = B
79 - 70 = C
69 - 60 = D
59 - 00 = F

Cheating and Plagiarism
All policies that are stated within the CSUF general catalog regarding plagiarism and cheating will be enforced.

Cheating. Cheating is the practice of fraudulent or deceptive acts for the purpose of improving a grade or obtaining course credit. Typically, such acts occur in relation to examinations. It is the intent of this definition that the term cheating not be limited to examinations situations only, but that it include any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means.

Plagiarism. Plagiarism is a specific form of cheating that consists of the misuse of the published and/or unpublished works of another by representing the material so used as one's own work.

Student Disabilities
The Department of Health Science cooperates with the Office of Services for Students with disabilities (SSD) to make reasonable accommodations for qualified students with disabilities (cf. American with disabilities Act and Section 504, rehabilitation act). If you have not registered with SSD, you are encouraged to do so. After meeting with the SSD counselor, present your written Accommodation Request to me as soon as possible so we may accommodate your request.

* As a courtesy to others in class please turn the ringer off on all pagers and cell phones. Violations of this matter will be considered as inappropriate student behavior and may be submitted for disciplinary action.
The following schedule is tentative and may be modified by the instructor depending on circumstances encountered by the students during the project.

August 27
1. Introduction to course requirements.
2. Discuss possible projects and sites.
3. Formation of student teams and assignment of team projects.

September 03 No Class/Labor Day

September 10 Project proposal report assigned and due next week.
Library tour.

September 17 Project Proposal Report due.
1. Project proposals discussed.
2. Discuss site visits and design of data gathering devices.

September 24
1. Discuss project site visit and review of data gathered.
2. Discuss background information including Literature Review.
   a. Source materials (library)
   b. Collect information from the Literature.

October 04
1. Discuss information gathered from Literature, geographic community and private sources of information, and information gathered at project site.
2. Discuss risk assessment instrument.

October 08 Background Information Report due.
1. Conduct pilot test on risk assessment instrument.
2. Discuss revision of instrument.

October 15
2. Discuss risk assessment results with group.

October 22 Discuss the development and implementation of the program.

October 29 Risk Assessment Report due.
1. Discuss the evaluation of the program.
2. Conduct pilot test of evaluation instrument.
3. Discuss the evaluation instrument revision.

November 05
1. Conduct the Environmental/Occupational Health and Safety Intervention
2. Discuss Program and Program Evaluation.

November 12 Program Development Report due.

December 03 Discussion of final project.

December 17 Final Project Report due.
Health Science 105         Final Project Report Outline
The final report will contain all the following elements:
Title Page
Table of Contents
Abstract (a one page summary of the paper)

I. Introduction to the Project
Your introduction serves to introduce the reader to your paper and is essentially a summary of what is to follow. Begin with two or three paragraphs that introduce the paper and describe how the various parts are presented. These initial paragraphs are followed by:

A. Problem Statement and Purpose of the Project
The problem typically becomes clear to you form reading the Literature, from your own experiences and those of others, and from other information that you have gathered. This information leads you to make the problem statement, usually stated as: "There is a need to provide a environmental and occupational health/safety (EOHS) prevention program for such-and-such a problem to such-and-such population . . ."

The problem statement is immediately followed by the overall purpose of the project. Remember that this is a risk assessment project so that its purpose will be to plan, implement and evaluate an EOHS prevention program.

B. Justification
What is it about the problem that justified the expenditure of your time, effort and resources (and those of others as well)? Indicate why the project was important to do or was worthwhile doing. For example, the EOHS problem represents a risk to a significant portion of the population; or, the consequences of the health problem represent a serious impact to the target population, etc. You can phrase this by stating: "The expenditure of the researchers' time, effort and resources is justified by . . ."

C. Limitations
A limitation is a factor, usually beyond your control, that causes you to limit, modify or change your activities. A limitation dictates what you can do and typically arises out of the situation you are working in. For example, you may be aware that the correct way to measure change in EOHS behavior is to observe the target behavior before and after an EOHS intervention. However, the situation may be such that you were not able to do so either because time did not allow it, the agency did not permit it, the target group was not available, etc.

Limitations also apply to your results, conclusions and recommendations. The nature of your project is usually such that you cannot generalize to the entire target population. Hence, you must be careful to inform the reader the limitations of your project, results, conclusions and recommendations.

II. Background Information
Introduce this section with a paragraph or two that describes the various parts that it will include (i.e., the Lit Review, Agency/situation Description, etc.) and discuss the importance of the background information for your project. The various parts that make up this section include all information that was gathered from a variety of sources: the literature, public information, and existing agency documentation, interviews conducted by the writer(s), personal experiences and the like. You can arrange your information as follows.

A. Literature Review
This is an extensive and comprehensive review (an extensive summary) of the literature available on the various topics or areas that your project involves. Sources of your literature review include books, journals, magazines, newspapers, monographs, pamphlets, conference papers, Internet, correspondence, etc.

Structure your review as follows:

1. **Introduction**
   A brief introduction that states the topic areas reviewed (see II.A.2. below).
   a. **Sources**
      Typically your sources will be in the professional literature which includes journals, texts, and various professional writings. You will more than likely access this information by means of a computerized retrieval program, like Medline. For example, if your project had to do with lead you would indicate that you reviewed available journals and texts related to lead.
   b. **Time Frame**
      This refers to the time span your review covered. For example, it may have been necessary to review the last ten years of the literature because of the scarcity of information related to your problem area. Or you may have only had to review the last five years. The time frame dependents on how far back you had to review in order to get a complete picture of the problem.
   c. **Comments**
      In this section you will include comments related to the review process itself. For example, was there substantial information available and easily obtained, or was there little and difficult to access? Did it go easily for you or was it difficult.

2. **The Body**
   There is a minimum of three areas you must cover although you are certainly free to cover others as the need arises. The three include:
   a. **The EOHS Problem**
      Utilizing information from the literature describe the EOHS problem, its incidence, prevalence, prevention, treatment modalities, etc.
   b. **The Target Population**
      Who is most likely to be effected by the problem and why.
   c. **Model Programs**
      This is a description of HOHS prevention/intervention programs that have been previously tried. Focus on the various methods and techniques that were used and their applicability to your intended EOHS intervention program.

3. **Summary**
   Conclude this section with a summary of the information included in the body of the literature review.

   It may happen that you will find little or no information in the literature about your health problem. You should note this in your paper in the appropriate section. For example, if the target population you will be focusing on is so narrow that no other EOHS intervention programs have previously been developed for it (e.g., left handed, five foot press operators) you would note this in your paper but you would review literature for a more general population (e.g., normal press operators).

**B. Agency/Situation Description**

In this section you present information about the agency or situation in which your project
took place. This would also include relevant demographic and geographic information about the area that agency serves or that the situation includes.

C. Target Population Description
   This section includes preliminary information gathered about the target population either through face-to-face interviews, questionnaires or formal observations or through second party surveys. Remember that the target population is where your target group comes from, whereas the target group is the group your EHOS intervention program actually impacts. There can be many possible target groups within a target population.

D. Implications for the Program
   This is a systematic summary of all the background information that was presented in II.A. II.B. and II.C. indicating the implications of this information for the EOHS intervention program you carried out. The word "implication" is used here to mean "... the effect of, the impact on." For example, suppose that from preliminary target population description you found the target population had an average of 14 years of education (i.e., two years of college). You could reasonably conclude a number of things about the target population as related to your intended EOHS intervention program: they are fairly sophisticated educationally, their reading and vocabulary level will be fairly high, etc. The implication of this fact for your EOHS intervention program would be that the way in which you teach the material would have to be fairly sophisticated.

III. The Risk Assessment
   Begin this section with a paragraph or two that discusses the purpose of the risk assessment and its relationship to the development and implementation of your EOHS intervention program. Follow this with a brief summary of the sections that follow.

   A. Instrument Design
      The "instrument" is the device you used to gather information from the "subjects" (i.e., the people who on whom the instrument is used). The "instrument" will contain a number of "items" that may be a paper-and-pencil questionnaire or it could a questionnaire used in a face-to-face interview. Notice that all questionnaires are instruments, but not all instruments are questionnaires. Similarly, items on a questionnaire may be questions or statements. Again, all questions are items but not all items are questions. In your paper use the technical terms "subject," "instrument" and "item" in referring to your Needs Assessment Instrument.
      Begin this section with a paragraph that discusses the purpose of the instrument in gathering information about the target population. Discuss the format of the instrument and its various parts indicating the reasons why the particular format(s) was chosen. For example, a pencil-and-paper questionnaire versus a face-to-face interview.

      1. Item Description
         This section can be quite extensive since each item must be discussed in terms of how it was developed or selected and what purpose the information gathered by it served in the development of the risk assessment instrument.
         In this section you will discuss each item of your instrument indicating for each:
         a. The information sought. For example, "This item sought to identify the chronological age of each subject."
         b. The importance of this information to the development and implementation of your EOHS intervention program. For example, "It was important to determine whether
members of the target group were relatively close in age since a wide range in each might affect
the relevance of the health education program material to some members of the target group."

c. How the item was developed (or where was it obtained if it was not original). For example, "The item was originally used in the National Safety Council (Smith, 1998) but was modified for the this survey." Or, "The item was developed by the EOHS researchers based on their academic and work related experiences."

d. Why the particular format was used (i.e., YES-NO, categories, 1-to-5 scale, etc.). The format has a lot to do with the nature of the information you are obtaining and how you intend to statistically analyze the resulting data. For example, you can obtain the subject's age by simply asking, "How old are you" and leaving a space to write the answer. Or you can ask the subject to indicate if they are between 16 and 20, 21 and 25, 26 and 30, etc. The second format forces the subject to answer in a category, which you might want to do to simplify statistical analysis. On the other hand, if asking about an attitude, a 1-to-5 or Lickert Scale (Strong Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree) is more appropriate because attitudes have more nuances or subtleties.

e. How the item was scored and statistically evaluated. Notice that scoring an item (when is it correct, when incorrect) is different from statistically evaluating it. Be sure to determine your statistical procedures at the same time you develop the item - NOT after you have collected your data.

f. Other information that helps the reader understands your risk assessment instrument. You may want to group items that are similar together to save time and space. For example, a number of items that gather demographic information may be similar enough in terms of 1.b., 1.c., 1.d., and 1.e. so that the same explanation fits them all.

2. Instrument Protocol

The protocol is part of the instrument. The term "protocol" comes from the field of psychometric (psychological testing) and refers to the detailed instructions written for the test administrator (i.e., the person who administers the test) who follows such instructions very carefully and in detail in order to achieve standardization in the administration process.

Your protocol will consist of a sheet (or sheets) have detailed instructions for use in administering the instrument. Included are the instructions as to how, when and where it is to be administered, but also the specific language and the procedures that the administrator will use.

Your discussion of the protocol will include:

a. How you developed the protocol and why you included the directions and comments that it contains.

b. How it was pilot tested and revised. The protocol has to be tried out beforehand to see if there are problems. Include the protocol when pilot testing the instrument (see the next section).

Since the protocol will be at least a page long it should be appropriately labeled and placed in an appendix. Refer to the appendix, giving the page, (see Appendix III, Pg. 427) when referring too specific items or sections. If your revision of the protocol was extensive you should include copies of both the original and the revised versions.

B. Pilot Testing the Instrument

A "pilot test" is a process or procedure applied to your instrument. It is not a "thing". Hence, you will not do a pilot test; you will pilot test the instrument!

The instrument will be tried out in advance on a few (i.e., 3 or 4) subjects who are
members of the target population to determine the clarity of the items, problems administering
the instrument, etc. Notice that you pilot tests the protocol along with the instrument.

You need at least two people to pilot test the instrument: one to administer the instrument
and the other to observe the proceedings. As soon as your subjects have completed the
instrument they should be interviewed (debriefed) about their experience. This can be done
either individually or as a group. Begin by asking for general impressions about the instrument
and then ask about each specific item on the instrument. For example, you can ask what the
subjects thought you meant by both the question and the answer: "What did you think was
meant by item #3? Was it clear? Were the answers clear?" After covering all items as for
overall impressions, comments, recommendations, etc.

C. Instrument Revision

Describe the revisions made and why they were made. It is possible that revisions were
not made because the instrument was thoughtfully and carefully constructed. While this is
improbable, it is not impossible. Most students, however, find they have to make some changes.

D. Instrument Administration

Describes the actual administration of the risk assessment instrument - when and where,
how the subjects reacted and responded and any other pertinent information. Of particular
importance is anything that may have influenced or invalidated the results.

E. Results and Their Implications

The results should be presented in a manner that facilitates the reader's understanding.
Graphic presentations (such as charts, tables, figures and the like) are often used for this purpose.
Usually they are very helpful.

However, graphic presentations are NOT always helpful. For example, if you are
discussing the results of an item that measured a simple YES or NO response, it would be
sufficient for you to say, " . . . the majority (64%) of the respondents indicated that they did
practice safe . . ." Notice that it is superfluous to say that 46% said NO, since the reader can
easily figure that out for him/herself.

The results of each item of the instrument should be discussed in terms of their
implications for the development of the EOHS intervention Program. For example, your
intended EOHS program is going to focus on hand injuries with emphasis on the use of gloves.
Your results indicate, however, that 98% of your subjects know about gloves but only 3% have
gloves provided by their employer. The implications for you program are that you need to
change attitudes and behavior rather than knowledge.

IV. Program Development

Generally this describes the various tasks undertaken in planning the EOHS intervention
program. Introduce this section with a paragraph or two that indicates what topics will be
covered and why they are important to the overall project. The section includes the following
headings.

A. Goals and Objectives

Remember that a goal is an overall intent or purpose whereas an objective is a specific
target or the object of a specific course of action. For example, your goal may be to educate a
particular group of people about glove use so as to reduce the overall prevalence of hand injuries.
One of your objectives within this goal is to teach them about the proper type of glove. The goal
is where you are going; the objectives are the steps you take to get there.

B. Development of the Intervention
Introduce this sub-section with a paragraph that indicates that a copy of the Intervention is included in the appendix (give number and page). Do not include a copy of the Intervention in the body of the paper since this section only discusses the process you went through in developing the Intervention. Your discussion should cover the following:

1. **Sources of Information**
   Where did you obtain the information used in the Intervention?

2. **Topics**
   Why did you select the topics you covered in the Intervention?

3. **Teaching Techniques and Devices**
   What teaching techniques and/or devices (i.e., lecture, group discussion, videotapes, overhead transparencies, handouts, posters, chalk board, etc.) were used and why?

4. **Alternative Methods and Strategies**
   This should be a thoughtful discussion of possible alternative EOHS methods and strategies that you could take should various things go wrong. In other words, what are your contingency plans should, say, your main researcher had an auto accident on the way to the program?

C. **Time Schedule**
   This is a calendar of the EOHS intervention program as you intended to do it and as it actually worked out. Use a time line chart with an explanation.

D. **Resources/Budget**
   Although you may not actually use much money, you will use your time. Time is a resource as much as money or other resources. If you worked in a team or group the allocation of the various members to activities represents a resource that should be explained.

V. **Program Implementation**
   This section discusses the actual implementation process as it occurred. Introduce the section with a paragraph or two that discusses the importance of good program implementation and a description of the various topics that are to follow.

A. **Implementation Plan**
   This is typically given as a set of phases or steps that were taken to implement the program. An implementation plan is the process by which an agency or organization lays out the recommendations to accomplish the project. An implementation plan uses a combination of methods including advocacy, financial, and technical assistance.

B. **Implementation Process**
   This answers the question - what actually happened. An evaluation of you as a health educator conducting the training should be included. Recommendations for future action are also appropriate. Cover these sub-sections:
   1. **Overview**
      This is a general description of the implementation process from the EOHS researchers’ point of view. It is not meant to be a summary of the project (that comes later). It is instead the writers' impressions and reactions to the program.
   2. **Performance of the EOHS Researcher(s)**
      This is a candid, frank and honest self-evaluation of the researchers' performance in implementing the EOHS intervention program. Both positive and negative aspects should be discussed with examples given.
   3. **Recommendations**
VI. Evaluation

This section discusses the evaluation procedures you developed to determine the effectiveness of your EOHS intervention program. This section includes the development of an evaluation instrument (pre- and post-test) as well as the statistical methods used to evaluate the results. Begin with a paragraph or two that discusses the rationale of your evaluation plan.

A. Background Information

Includes whatever sources were used (from the Literature or elsewhere) to develop and implement the evaluation.

B. Evaluation Instrument Design

Begin this section with a paragraph that discusses the overall purpose of the instrument and the reason you chose the particular format and items. Remember that the same instrument will be used in both the pre-test and the post-test. The point of this is to compare and contrast the results before the program and after the program.

It is the professional responsibility of EOHS researcher to determine whether or not their interventions were successful or unsuccessful and why. Evaluating to see if the program goals and objectives were achieved does this. The EOHS researcher must always think in terms of impacting the risk behavior of the target population by changing their knowledge, attitudes or behavior.

1. Item Description

This section can be quite extensive since each item is discussed in terms of how it was developed or selected and what purpose the information gathered by it served in the development of the program. In this section you will present each item in your evaluation instrument indicating for each:

a. What specific knowledge, attitude or behavior related to your intervention is targeted by this item?

b. Why was this specific knowledge, attitude or behavior targeted?

c. Why you used the particular format of the item (i.e., True-False, fill-in, 1-to-5 scale, etc.) The format has a lot to do with the kind of the information you are testing for and how you intend to statistically analyze the data. Knowledge is tested for differently than attitudes or behavior. For example, "A multiple choice format was used since this format is a reliable and standardized way of testing for knowledge and lends itself to statistical analysis."

d. How the item was scored and statistically evaluated. Notice that scoring an item (when is it correct, when incorrect) is different from statistically evaluating it. Be sure to determine your statistical procedures at the same time you develop the item - NOT after you have collected your data.

e. Other information that helps the reader understands your evaluation instrument.

You may want to group items that are similar together to save time and space. For example, a number of items that gather demographic information may be similar enough in terms of 1.b., 1.c., 1.d., and 1.e. so that the same explanation fits them all.

2. Instrument Protocol

The protocol consists of the procedures followed in administering the instrument. It
includes not only the instructions as to how, when and where it is to be administered, but also the specific language and procedures that the person administering the instrument will use. Follow the instructions in II.A.2. (above) for this sub-section.

3. **Pilot Testing and Revising the Instrument**
   The instrument will be pilot tested (or tried out in advance) on a few (3 or 4) subjects who are members of the target population to determine clarity and validity of the items, etc. Revisions are made as needed.

4. **Instrument Administration**
   Describes the actual administration of the evaluation instrument - when and where, how the subjects reacted and responded and any other pertinent information. Of particular importance is anything that may have influenced or invalidated the results.

5. **Statistical Analysis**
   In this section discuss the statistical procedures you designed before you obtained the results and why you chose them.

6. **Results**
   The results should be presented in tables with appropriate explanation given. Statistical analysis is required with determination of significance levels so be sure to discuss the statistical procedures you used. An overall discussion of the results and their significance must be included at the end of this section. (Note that this section is double counted on the evaluation sheet. This indicates the attention you should give this section.)

   The results should be presented in a manner that facilitates the reader's understanding. Graphic presentations (such as charts, tables, figures and the like) are often used for this purpose. Usually they are very helpful. However, remember graphic presentations are NOT always helpful or appropriate.

   The results of each item of the instrument should be discussed in terms of goals and objects of the EOHS intervention program. For example, your EOHS program intended to impart knowledge (information) to the target group, did it do so? Since you will be comparing pre-test with post-test results you will have to indicate whether there was any change in the subjects and whether that change was statistically significant by means of a T test.

VII. **Discussion**
   The discussion section brings the whole project together. Introduce this section with a paragraph or two that tells what you are going to discuss and why.

   A. **Overview of the project**
      In a brief and summary fashion take the reader through the entire project from start to finish from the point of view of the writer(s).

   B. **Shortfalls**
      Discuss what mistakes you made and what you learned from these mistakes. You should keep track of these during the project.

   C. **Successes**
      Similarly discuss your successes and what you learned from these as well. (Do not be afraid to pat yourselves on the back!)

   D. **What the writer(s) learned from the project.**
      There should be several key things that you learned about EOHS and about yourselves from the project. Discuss these things.

VIII. **Summary of the Paper**
In this section you do a brief summary of the paper briefly stating the various sections of the paper and what they contain.

Bibliography (References)
Appendices