



PimaCommunityCollege

West Campus

CHM 128IN Forensic Chemistry Syllabus for Spring 2012

Course Information:

Course Prefix/Number: **CHM 128IN**

Course Title: **Forensic Chemistry**

Semester: **Spring 2012**

CRN (Section Code): **24959**

Class Days/Times: **F 8:00 a.m.-1:00 p.m.**

Site/Room: **SCI K221**

Credit Hours: **4.0**

Teaching Format: **Integrated Lecture-Laboratory**

Instructor Information:

Name: **David A. Katz**

Office: **E-235 (Tortolita Building)**

US Mail: **Pima Community College
2202 W. Anklam Rd.
Tucson, AZ 85709-0270**

Phone/Voice Mail: **(520) 206-6044**

E-mail: **David.Katz@Pima.edu**

Web site: **<http://www.chymist.com>**

Availability: **Office hours: MW 1:30-3:00 p.m.; TTh 10:30-11:30 am, 3:00-4:00 pm; F 1:00-2:00 pm**

Generally, in addition to my office hours, I am in the office at least 30 minutes before class (if I am not in the lab). I am also available by appointment.

Instructional Materials:

Required Text: Saferstein, Richard, Criminalistics, 10 edition, Prentice Hall, 2011.

You must have access to a computer with Internet connections. Course material or appropriate links to Internet sites will be available on the course web page at <http://www.chymist.com> under the heading **Pima Chem Courses** (left-hand menu) and then **Chem 128** (Left-hand menu). Some material will be supplied in class on a CD-ROM. The web files are in PDF format and require Adobe Acrobat Reader (available for free at <http://www.adobe.com>)

You will also need to access **MyCrimeKit**, www.mycrimekit.com, an online supplement that offers book-specific learning objectives, chapter summaries, flashcards and practice tests as well as video clips and activities to aid student learning and comprehension. MyCrimeKit also includes Research Navigator and weblinks giving you access to powerful and reliable research material.

Laboratory Manual: Laboratory Experiments for Chem 128, Pima Community College. The experiments will be available for download from the course web page at <http://www.chymist.com> - Pima Chem Courses (left-hand menu) - Chem 128 (Left-hand menu) or will be supplied on a CD-ROM. The web files are in PDF format and require Adobe Acrobat Reader (available for free at <http://www.adobe.com>)

Course Description:

CHM 128IN, Forensic Chemistry, is an integrated lecture-laboratory course that introduces various aspects of the crime laboratory and the forensic sciences used in solving crimes. It provides a descriptive overview with examples on the role of the Crime Lab and the Criminalist in this process with hands-on activities and experiments. However, it should be emphasized that this is a science course, primarily *Forensic Chemistry*, and therefore, the emphasis will be on the scientific aspects and approaches. The course provides a rudimentary overview of the manner in which physical evidence from crime scenes and related issues are managed and describes and discusses the process of solving crimes, emphasizing the role of collecting, recording and analyzing physical evidence. The course will expose the students to real crime labs, its functions, activities and its personnel. This is not a comprehensive preparatory course for Criminal Investigators or Criminalists.

The major topics of discussion will come from a number of varied sources such as the Internet, newspapers, news and forensics magazines and journals, and television programs such as *Forensic Files*, *The New Detectives*, *Secrets of Forensic Science*, and other shows along with televised trials on truTV.

This is an integrated course. Classes are held in a chemistry laboratory and will integrate lecture, discussion, activities, and experiments in each class session.

This course satisfies one semester of a general education laboratory science requirement.

Course Objectives:

Upon completion of the course, the student will be able to do the following:

1. Summarize the interdisciplinary nature of forensic science and indicate the vital roles of chemistry, biology, and physics, as well as genetics and medicine in crime analysis.
2. Discuss what constitutes scientific physical evidence and indicate the specific applications of chemical, nuclear, spectrographic and computer analyses to elucidate such evidence.
3. Describe methods of analyzing and identifying fluids, hairs and fibers as to human, animal and artificial origins and cite related cases of crime solution.
4. Explain how the discovery of DNA structure and sequence has affected the biochemical analysis of evidence and the enhancement of criminal identification
5. Describe instrumentation and techniques of evidence analysis applied to gunshots, bullets, shot shells, gunshot residue, fires and explosions, drugs, poisons, alcohol and toxic chemicals
6. Match chemical and physical tests to the analysis of evidence data from metals, paint, glass and crystalline materials, paper and clothing.
7. Describe the characteristic capacities, equipment, roles and relationships of crime laboratories from federal to local agencies and at independent facilities.
8. Cite examples where crime labs successfully supported apprehension of criminal activities as well as notable cases where data analysis proved incomplete, misleading or wrong.
9. Discuss the types of chemical, biological and nuclear hazards posed by terrorists and methods used to detect and neutralize their efforts.
10. Differentiate between "scientific evidence" and "expertise evidence" in forensics.
11. Indicate new developments in forensic science and essential needs for future improvements in evidence analysis.
12. Evaluate and explain various career options and educational preparations in forensic science, chemistry, law enforcement, and court-related professions.

Course Outline

The following outline presents topics, activities, and experiments in the order they will be discussed in class. Although each topic is listed by specific date, there may be some changes due to extended class discussions, guest speakers, activities/experiments, or a field trip.

Applicable readings or links to reading material is available on the CD-ROM provided in class or on the course web site.

As this course also includes basic chemistry, the chemical information will be taught on a need-to-know basis spread over several classes. Information and tutorials for chemistry topics are on the course web site.

Laboratory experiments should be downloaded and read before class and the appropriate sections on laboratory techniques should be read before class. You will not be given copies of laboratory experiments in class.

Date	Topic	Reading Assignment	Lab Experiment and/or Activities
Jan. 20	Welcome to class Review syllabus and course requirements. Introduction A brief history of forensics The crime lab The expert witness	Chapter 1 Pages 2- 25	No laboratory activities
Jan. 27	Crime scene investigation Physical Evidence	Chapter 2 Pages 26-57 Chapter 3 Pages 58-91 Reading Assignment for next class: Metric System (on web site) Temperature (on web site)	Safety in the Academic Lab Check in Faces: Identification of a suspect
Feb. 3	The metric system Temperature Physical properties Glass Soil	Chapter 4 Pages 92-117	Safety Test Refractive index of glass fragments
Feb. 10	Atoms and Elements Origin of the elements Element symbols The periodic table Elements and Life Chemical bonds Inorganic compounds and nomenclature Organic compounds and nomenclature Spectroscopic methods	Chapter 5 Pages 118-143 Chapter 6 Pages 144-162 Formula Writing and Nomenclature of Inorganic Compounds (on web site) Nomenclature of Organic Compounds (on web site)	Spectroscopy
Feb. 17	Microscopic examination Hair identification Fibers and fiber identification Paint	Chapter 7 Pages 164-187 Chapter 13 Pages 320-351	Fibers and fiber identification: TIS fabric stain Burning test for fibers Hair Analysis Examination of paint chips
Feb. 24	Rodeo Days – No class		

Date	Topic	Reading Assignment	Lab Experiment and/or Activities
Mar. 2	Document examination Handwriting analysis Ink analysis Documents	Chapter 18 Pages 450-469	Ink Analysis Handwriting Analysis
Mar. 9	Fingerprints History of fingerprinting Fundamental principles Classification of fingerprints Detecting fingerprints	Chapter 16 Pages 388-415	Fingerprinting Fingerprints Dusting and lifting of fingerprints Cyanoacrylate development
Mar. 16	Spring Break – No class		
Mar. 23	Drugs Drugs Poisons Toxicology	Chapter 8 Pages 188-211 Chapter 9 Pages 212-239	Drug Testing of Some Over-The-Counter Drugs
Mar. 30	Blood Characterization of blood Bloodstains	Chapter 10 Pages 240-263 Chapter 12 Pages 296-319	Blood drop studies
Apr. 6	Fire and Explosions The chemistry of fire NFPA Arson investigation Explosives and explosions	Chapter 14 Pages 352-371 Chapter 15 Pages 372-387	Headspace analysis of flammable liquids
Apr. 13	DNA Structure of DNA PCR DNA analysis	Chapter 11 Pages 264-295	DNA Isolation DNA Identification
Apr. 20	Reports		
Apr. 27	Reports		
May 4	Forensics exam		
May 11	Final exam week		

Course Requirements:

The final course grade will be based on attendance, class participation, quizzes, exams, lab experiments, projects, two short reports, and a final exam. The approximate percent weight of each is given below:

- Attendance (includes participation in experiments)..... 10%
- Case study report (see schedule of important dates) 30%
- Exams, quizzes, lab experiments, and projects 60%

Chem 128IN Course Policies and Information

Preparing for Class

As an integrated class, we will discuss information, as scheduled on the syllabus, and **will do activities and/or experiments in every class**. It is your responsibility to read the assigned material in advance and to **download and read experiments** and/or activities to be performed in each class. There are computers available in the laboratory with Internet capabilities, so you can access the experiments online, but you are not permitted to print out experiments and/or activities in the laboratory.

Quizzes/Assignments

There will be occasional quizzes or assignments, which will count as quizzes, during the semester. These will usually be take-home assignments. Each quiz will cover a specific topic or assignment. All quizzes/assignments have the same weight, even if the point count on particular quizzes differs. All quizzes are announced in class. Every effort is made to grade and return quizzes by the next class. Grades on quizzes are calculated as percentages.

- There will be a quiz on metric system and temperature (this will be a take-home quiz)
- There will be separate quizzes on element names and symbols (in-class), chemical formulas and nomenclature (take-home) and organic compounds (take home).

Exams

There will be a hands-on forensics exam at the end of the semester. You will work in teams of 2 individuals. You will be given clues and asked to solve a crime using techniques you learned in the forensics part of this course.

Final Exam

There will not be a final exam at the end of the semester. The forensics exam is given during exam week.

Laboratory Experiments and Laboratory Reports

This is an integrated class and there are laboratory experiments or activities scheduled for every class.

You are expected to download and read each experiment or activity before coming to class. If you are not prepared for lab, you may be asked to leave and will receive a grade of zero for that laboratory experiment.

Laboratory reports usually consist of completing data pages which are part of the experiments and answering any questions and/or completing any graphs, or calculations needed. In some cases, individual reports will be required and in other cases one report will be required for each laboratory group. Your instructor will advise you of this.

Reports are due no later than **one week** after the experiment is completed.

Laboratory reports are graded on a 25 point scale based on neatness, completion of data, and answers to questions. After the first 2 missed or incomplete experiments each missed or incomplete experiment is graded as a zero.

LABORATORY SAFETY

This is a hands-on course that involves the use of laboratory chemicals. At the beginning of the semester, there will be a safety presentation in class, followed by a safety test in the following class. You must get a 100% on the safety test.

If there are any hazardous chemicals used in any experiment, you will be advised of any special precautions and handling of chemicals in the experiment write-up and/or by your instructor before the beginning of the experiment.

You are required to observe laboratory safety rules, in particular, wearing of safety goggles and wearing closed toe footwear (sandals and flip-flops are not permitted in the lab) If you are in violation of the safety rules, you will be asked to leave the laboratory and will receive a grade of zero for the day.

Case Study Report and Presentation

Students are required to write a case study report. This is a study of various forensic science methodologies in a real OR in a simulated crime case. Include a short description of the case, the physical evidence involved in the case, how the physical evidence and the crime lab contributed, and what was the outcome. Although the development of the inquiry and the story are important, the presentation should tell the story in a concise manner and elaborate on the physical evidence. The student's presentation is a lesson, not a detective story.

Select a case study from the literature (see the reference section on the course web page) that has sufficient involvement of the crime lab or a case from truTV. Pay attention to all the details: crime scene description(s), participants in the case (victim, suspects), family, friends, police, crime lab investigators, etc., the background, description of the discovery and collection of the evidence, handling and analyses of the evidence, trial, and outcome. Be sure to discuss the contribution of the crime lab.

Prepare a handout of 1-2 neatly typed pages for the class with a concise summary of the case, with sketches or other aides if necessary. Each student is responsible to submit the handout to the instructor as a PDF file. The content of the handout PDF file should be approved one week before the presentation day by the instructor. An approved handout is a prerequisite of the presentation. Prepare your presentation in PowerPoint for the presentation day. Rehearse your presentation, and be prepared to answer questions. The presentation should be about 15 minutes.

Topics for the case study report must be approved by your instructor. This is to reduce multiple duplications of cases and allow your instructor to make suggestions for finding information. It also insures that the topic of the case study fits the required report topic. If the topic was not approved and it does not fit the topic requirement, a grade of zero may be given.

Case study reports must contain a bibliography of sources used.

Submitting Work

All quizzes, exams, and reports should be submitted in writing, in class, no later than the dates specified. **Late papers will be downgraded by 10 points in the first 24 hours** and an additional 10 points until the next class period. An additional 15 points will be deducted until the third class period. After that, a grade of zero will be recorded for that assignment or report. Since report due dates are announced at the beginning of the semester, there are no exceptions for late reports.

You may submit your assignment via the Internet if you cannot be in class on the day it is due. The time stamp on the message, when it is received, will determine the date. You should receive a reply confirming that your emailed message or assignment was received within 48 hours of submitting it.

Please be advised that email occasionally gets misdirected, can end up being blocked by a spam filter, or lost in cyberspace. (blank subject lines or subjects such as "Hello" may go directly into a trash file.) It is your responsibility to make sure that the message was received.

Make-up Policy

THERE ARE NO MAKE-UP ACTIVITIES, or EXPERIMENTS no matter how valid your excuse may be. All activities, and experiments are set up for specific classes and the materials are not available for later dates. THIS INCLUDES PARTS OF AN EXPERIMENT MISSED AS A RESULT OF LATENESS TO CLASS. (Any take home exams or activities will have 10 points deducted each day it is late.)

NOT SUBMITTING A CASE STUDY REPORT WILL RESULT IN A GRADE OF "ZERO" FOR THAT ASSIGNMENT.

MISSING AN EXAM OR PROJECT WILL RESULT IN A GRADE OF "ZERO" FOR THAT EXAM OR PROJECT.

☞ If you know in advance that you will not be present for a class, please inform your instructor. (Please note that an excused absence is still considered an absence from class.)

☞ If you have a conflict with the forensic exam, it must be resolved before the last week of the course. The forensic exam takes time to set up all the materials needed and cannot be set-up for an additional day.

Academic Integrity

Violations of scholastic ethics are considered serious offenses by Pima Community College, the Department of Chemistry and by your instructor.

Cheating on exams or quizzes (including copying someone's assignments and handing them in as your own work) will result in a grade of "zero" for that exam or quiz, and, at the instructor's discretion, possibly an F for the course. The zero will be calculated into your final grade point average for this course.

All work done for this class must be your own. While you may discuss assignments with other class members, the final written project must clearly be your own. You may use work from books, the internet, and other materials if it is properly cited. Copying from a published source without proper reference or from a person without acknowledgement, is considered to be plagiarism and will result in an F for the assignment, and, at the instructor's discretion, possibly an F for the course. An entire report downloaded from the Internet will result in an F for the course. There will be no exceptions.

Students may consult the PCC Student Handbook sections on student code of conduct, on scholastic ethics and on the grade appeal procedure. Copies are available at PCC campus libraries and at <http://www.pima.edu/~coadmissions/studresp.htm>.

Field Trip and Guest Lecturers

This course will include a field trip to the local DPS Crime Lab (Department of Public Safety (2525 E. Valencia Rd.)). This trip is an integral part of this course. Attendance is mandatory. Each student is expected to arrive at the site of the field trip on his/her own. Car pools will be arranged to minimize the number of cars traveling to the site. Please check your college email the night before the field trip in the event that an unforeseen circumstance causes a cancellation.

We will host several guest lecturers during the semester. At this writing, I am trying to schedule speakers to discuss fingerprinting, counterfeit money and documents, and fire and arson investigations. There may be an additional speaker or two depending on time and availability. When possible, guest speakers will be scheduled after the class has completed discussions and laboratory activities of the topic so that we may have informed discussions of the topics. .

Attendance

Attendance is required for this course.

As an integrated course, a major portion of your grade is based on activities and laboratory experiments which are part of each class. Relevant information and applications of course material, as well as demonstrations, are also presented in class, that material is not in the textbook or course notes. If you miss a class, your instructor can tell you what material was covered and summarize the experiment, activities, and any discussions that took place, however, instructors do not have a set of formal lecture notes you can copy, nor are the materials for an experiment still available. It is your responsibility to get detailed notes from one (or preferably two) classmate(s).

Missing a significant number of classes will seriously affect your final grade. Since there is an experiment in almost every class, **missed experiments are counted as a grade of zero**. Also, leaving class early, without completing a laboratory experiment, will be counted as missing the laboratory experiment.

Attendance is graded. Attendance counts as 10% of your course grade. If you are in class on time, and complete the experiment of the day, you get 10 points for your attendance grade. If you are late, or leave early, you get as much as 5 points for your attendance grade. An absence is graded as a zero. An excused absence is still counted as an absence from class.

If you are absent from class for an extended period due to illness, an accident, or another valid reason, please have someone contact your instructor. You will need to supply a doctor's note or other supporting information listing dates for extended absence.

Lateness

Since this class involves a great deal of hands-on learning, lateness to class results in missed information and is disruptive to the other students. Please make every effort to get to class on time. **You will be penalized on your attendance grade for lateness.**

Since this course involves a great deal of hands-on experiments, if you do arrive late for a class, you may have missed important safety and lab technique information. At your instructor's discretion, you may not be admitted to class and can receive an absence (zero) for the day.

If work or other circumstances will prevent you from getting to class on time, please see your instructor as soon as possible to discuss the problem.

Participation

Part of your attendance grade is participation in class. There is assigned material to read for most classes. Those readings are listed under the topics section of the class schedule and are either on the course web page or linked to on the course web page. Some readings are on a CD supplied in class. You may be asked to answer general questions about the reading materials during the class discussions.

You are expected to take an active part in the activity or experiment in each class.

Extra Credit

There is no extra credit. Don't ask!

You must demonstrate that you have mastered or completed a substantial amount of the course material to obtain a passing grade.

Storms or Other Problems

In the event of a severe storm, other major weather problem, or other problem such as a power outage, the area may experience transportation disruptions and traffic delays or the college labs may not be in operation. If an exam is scheduled or a major assignment is due on a day when there is a severe weather problem (this excludes normal rainfalls), the exam or assignment deadline will be postponed until the next class.

Classroom Behavior:

Because of insurance limitations, non-registered visitors are not allowed at class sessions or on field trips.

Possession of drugs, alcohol or firearms on college property is illegal.

Eating, drinking, smoking and soliciting are not allowed in classrooms.

Pets, telephones, pagers and other electronic devices that distract students are not permitted in classrooms. Please turn off these devices during classes.

Students creating disturbances that interfere with the conduct of the class or the learning of others will be asked to leave.

Withdrawals

Students may withdraw from class at any time during the first 2/3 of the semester without instructor permission and without incurring any grade penalty. Please be kind enough to inform your instructor if you withdraw.

Students who are not regularly attending class and who have not submitted any assignments nor taken any quizzes or exams by the 45th day census date (see calendar) are assumed NOT to be participating in the class and may be withdrawn.

Please be sure to withdraw yourself by **April 5** if you do not expect to complete the class; otherwise you may receive a grade of "F" for the course and may affect your academic standing at the college. There is a late withdrawal process explained later in this document.

Incomplete grades are only given when a significant amount of class has been missed for medical or other legitimate reasons. (see information which follows)

ADA Compliance

Pima Community College is committed to providing accommodations for qualified individuals with disabilities in a timely and effective manner. To request a reasonable accommodation, students must be registered with the campus Disabled Student Resources (DSR) office. Accommodations will be made based on eligibility determined by Disabled Student Resources. Services can be requested at any time during the semester. Requesting services well in advance will help to ensure that resources are available when needed. Please contact a DSR office at 206-4500 or DSRhelp@pima.edu.

Workload

Students are expected to spend the normal amount of time required for a college course attending class sessions, doing assignments and research, reading and preparing for exams. The standard Carnegie Unit of college credit assigns 1 credit hour for each 15 hours of class time and assumes that students spend two hours working outside the classroom for each hour of classroom instruction. For a three-credit course, this translates to 135 hours per semester or an average of nine hours per week for a 15/16-week semester.

Chem 128IN Grading System/Policies

Your final grade will be a weighted average of your work during the semester and are calculated as follows:

A	=	100-90%
B	=	89-80%
C	=	79-70%
D	=	69-60%
F	=	below 60%

The actual percentage may vary based on a final class distribution, but will not be higher than these percentages.

My policy is that no one will miss a grade by one point. If your actual average falls at 89, and 90 is an "A", then your grade will be rounded up to a 90. An 88.9 will be a "B". The same applies to the other grade ranges.

A grade of 60 is passing.

Incomplete (I) grade:

"I" grades must be requested in writing by the student. Final decisions regarding an incomplete grade are made by the instructor and are subject to review by the Department Chair and the Division Dean. Generally, the student must have successfully completed at least 2/3 of the course material to receive an "I" grade.

Incomplete grades are generally reserved for medical and family emergencies that are of significant duration or occur at a critical time during the semester, they are not a way to withdraw if you are failing the course. Please contact your instructor before the last week of class to be sure that there is sufficient time to consider your request.

An incomplete grade generally implies that a student has completed a substantial portion of the course and has shown sufficient initiative to complete the course on his or her own in consultation with the instructor, however, there is no way to make up missed laboratory work. The student will receive a copy of the standard "I" form filed with the grade. This form will detail specifically what must be done to complete the course. A student has one year to complete the required work, otherwise the grade automatically reverts to an "F."

Due to liability reasons, an incomplete grade does not allow a student to sit through a course for another semester without paying tuition.

Late Withdrawal grade:

Your instructor has the ability to enter a late withdrawal grade (W) at the end of the semester as a final grade for the course if you request it and have not withdrawn by the normal two-thirds mark of the semester. **You must request the W grade, in writing, by the last day of classes.**

Once final grades have been entered, you cannot retroactively request a D or F to be changed to a W.

If you have not attended class, and have not withdrawn by the 2/3 semester date, your instructor will not honor a late withdrawal request.

Please be aware that a W may affect your financial aid or other funding. You are advised to check with the funding organization to make sure there are no adverse effects to a W grade.

Final Grades:

Students do not receive a grade transcript from the college mailed to the address given with registration materials. At the end of the semester when all grades have been recorded, students should access their grades through Banner Services on the Pima Community College web site. For privacy and security reasons, instructors may not post grades and may **NOT** give grades over the telephone. Students may also check grades by calling MAX 2000 at 206-4880.

Spring 2012 Calendar of Important Dates

Jan. 17	Spring classes begin
Jan. 30	Last day to withdraw with a refund
Feb. 23-24	Rodeo Days – no classes
Mar. 1	45 th Day (Census day) Non-attending students will be withdrawn from the course
Mar. 12-18	Spring Break – no classes
Apr. 5	Withdrawal deadline
May 8	Last day of regular classes. Last date to request a W grade in writing
	Forensics Exam
May 9-15	Final exam week

Case Study Report Information:

Students are required to write a case study report. This is a study of various forensic science methodologies in a real OR in a simulated crime case. The report should include a short description of the case, the physical evidence involved in the case, how the physical evidence and the crime lab contributed, what was the outcome. Although the development of the inquiry and the story are important, the presentation should tell the story in a concise manner and elaborate on the physical evidence. The student's presentation is a lesson, not a detective story.

Select a case study from the literature (see the reference section on the course web page) that has sufficient involvement of the crime lab or a case from truTV. Pay attention to all the details: Crime scene description(s), participants in the case (victim, suspects), family, friends, police, crime lab investigators, the background, description of the discovery and collection of the evidence, handling and analyses of the evidence, trial, and outcome. Be sure to discuss the contribution of the crime lab.

When researching the case on the Internet, use a search engine such as Google (www.google.com). Start out with one or two key words, then, after checking, add additional key words or terms. Use the word "and" or a "+" sign to join key words together. You can also use sentences or phrases in your search. Precede phrases or sentences by the term "intitle:" if you are looking for the phrase in the title of the article, or "intext:" if you are looking for the phrase in the text of the article.

A word of caution. Information on the Internet ranges from excellent to inaccurate. Wikipedia, may be a good starting point, but the information has not always been checked or is occasionally modified by individuals with the purpose of reinforcing their own agenda. Web sites often quote directly from other sites and omit important information. Some writers will inject their own viewpoints, writing styles, and emphasis, producing misconceptions. It is important to cross check information on at least two independent web sites and, if the information is identically worded, check a third web site. There are always two sides to an issue, don't just choose information from one side, try to get opposing viewpoints.

Prepare a handout of 2-5 neatly typed pages, double spaced, for the class with a concise summary of the case, with sketches or other aides if necessary and a bibliography of sources. Each student is responsible to submit the handout to the instructor as a PDF file. The content of the handout PDF file should be approved one week before the presentation day by the instructor. An approved handout is a prerequisite of the presentation. Prepare your presentation in PowerPoint for the presentation day. Rehearse your presentation, and be prepared to answer questions. The presentation should be about 15 minutes.

Topics for the case study reports must be approved by your instructor. (This reduces duplication of topics and will help you to manage information.)

Margins should be no greater than **one inch** (2.5 cm), top, bottom and sides.

Type size should be no greater than **11 point**, except for headings. Use a standard type font (such as Times, Calibri, or Arial), don't search for the font that takes up the most space. Points will be deducted for large type size or extra wide character spacing.

Diagrams, pictures, charts, and graphs may be important information to explain or illustrate your topic. These items are considered additional material. The diagrams, pictures, charts or graphs may be placed in the body of the text or added on separate pages at the end of the text. Don't forget to reference this material.

Try to use three or more references. Use multiple sources, do not use different sections of a single web site or a single book or magazine. Look for sources that may tell negative or unfavorable information about your case to obtain a balanced overview of your topic. Do not believe everything you read, you must apply some critical thinking to the information you find. Put the information in your own words rather than copying directly from the reference or the internet. Use footnotes or appropriate citations, where applicable, to acknowledge borrowed material, informing the reader of the source of statements or quotations, or for presenting explanatory or supplementary material not appropriate to the text. **Not citing direct quotes of downloaded material is considered plagiarism and will result in a grade of zero for the report. Please be advised that direct downloading of large sections of material from the Internet is considered to be plagiarism even with a citation listed at the end of the material.**

All sources used in the researching and writing of the report should be listed in a **bibliography**. Generally, the bibliography will be on the last page of the report. The bibliography (and also footnotes, if you use them in your writing style) presents the following information:

For a book:

Author's name (last name first), the title of the book (underlined or in italics) including any series or volume number, the edition, if other than the first, the publisher, the place of publication (or home office of the publisher), the date of publication on the copyright page, and relevant page numbers. An example of a book reference is:

Saferstein, Richard, *Criminalistics, An Introduction to Forensic Science*, 7th Ed., Prentice Hall, Upper Saddle River, NJ, 2001, pages 228-257.

For an article:

The name of the writer, the title of the article in quotation marks, the title of the periodical (underlined or in italics), the volume number (underlined or in bold print), the date of the issue of the periodical, and the page numbers. An example of a magazine reference is:

Roger, J., P. Angel, and Neville J. Woolf, "Searching for Life on Other Planets", *Scientific American*, **274**, No. 4, April 1996, P. 60.

For Internet material:

The name of the author or publisher of the home page, the title of the article in quotation marks, the title of the magazine or journal or database (underlined or in italics), Internet address of the article, and the date the article or the home page was last updated. (The internet address, by itself, is not considered a valid reference.) An example of an Internet reference is:

Proctor & Gamble, "The Tide Fabric Care Network",
http://www.pg.com/frameset_fs.jhtml?frameURL=www.tide.com, 2003

Internet references will be checked by your instructor. Failure to find and connect to an internet reference will invalidate that reference.

For unpublished material:

The name of the writer or individual (last name first), the title in quotation marks (if it is an article), and the date. If the information is relayed in an interview or by letter, tell the individuals professional position and use the term *personal communication* in place of the title. An example of unpublished information is:

Smith, John P., Technical Service Engineer, Nuclear Missile Company, *personal communication*.

If you have personal knowledge of your topic as a result of personal experience, include that information in the paper.

Diagrams, charts, tables, and pictures may be included in addition to the text of the paper. They are best added as separate pages at the end of the report rather than trying to space them into the body of the text. When referring to a table, write see *Table 1* (Roman or Arabic number may be used) and when referring to a picture or diagram write see *Figure 1*. Give credit to the source if the table or figure is not original.

If a proper bibliography is not included, the grade on the paper will be penalized by a minimum of 10 points.

English Composition:

This is a chemistry/forensics course and the paper is on a scientific topic. You are, however, expected to write with proper organization, composition, spelling, and grammar befitting a college level report. It is suggested that you may want to have your paper reviewed by your English teacher before completing your final product.

Binding:

A single staple in the upper left hand corner of the report is sufficient for binding the pages together. Fancy report covers, spiral bindings, and other types of bindings are not necessary and do not improve your grade.

Please submit a full copy of your report for your instructor. Prepare summary copies for the class. If you submit an electronic copy, the electronic copy must be in Microsoft Word format, RTF format, or PDF format.

Do not download material directly from the Internet or copy information directly from the case literature. Except for citations, you must put the information in your own words. Report information and references may be checked by your instructor through a variety of Internet sources and resources. Please note that the college subscribes to turn-it-in.com, a service that checks papers against thousands of sources for plagiarism, as such, be sure to properly cite references for all information and quotations.

Grades are based on content and accuracy of information, relevance to chemistry, proper references and citations, and composition. Reports are evaluated "as is" and are not returned for correction or updating of information.

Late reports will be penalized:

10 points the first 24 hours.

An additional 10 points until the next class period.

An additional 20 points will be deducted until the third class period.

After that, a grade of zero will be recorded for the report.

Not completing the required report can result in a failing grade for the course.

Caveats:

Your instructor will make every attempt to follow the above procedures and schedules, but they may be changed in the event of extenuating circumstances.

Students submitting assignments are advised to make copies for their own protection.

If you move during the semester, please file a change of address form at any PCC campus registration office.