CHEMISTRY 480
INDUSTRIAL INTERNSHIP
Fall Semester, 2017

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CATALOG DESCRIPTION - Practical work in an industrial setting for a minimum of eight weeks under the joint guidance of a practicing chemist and SFA faculty member.

PREREQUISITE/COREQUISITE - Prerequisite: Permission of the department chair and instructor.

TEXT - none required

COURSE OBJECTIVES – The student should demonstrate the practicing chemist’s role in an industrial plant setting.

STUDENT LEARNING OUTCOMES - Upon completion of this course, students will be able to:

- work independently, responsibly, and efficiently to solve problems occurring in an industrial plant setting.
- demonstrate clear oral and written communication skills.
- demonstrate an ability to find and use applicable procedures and chemical methods.
- demonstrate an ability to connect technical information and laboratory results and to prepare technically sound progress reports.
- interpret laboratory results and their application to industrial processes.
- apply textbook knowledge to real-world problems.
- demonstrate an ability to work within a group setting and facilitate ongoing progress of an industrial site.

COURSE CONTENT: Conduct an independent research project under the joint guidance of the of a practicing chemist and SFA faculty member.

COURSE REQUIREMENTS:

Written Communication:

Final report - report based on the experiences, knowledge, and research that occurred during the
Internship. Report must not release any proprietary information. This report should follow the guidelines given by the instructor and be a minimum of 5 pages of typed text (12pt font, 1 in. margins, note: tables / figures / references / acknowledgments do not count towards page count). Report is due before the last week of classes. (50%)

**Oral Communication:** The student will give an oral presentation either at a professional chemical meeting or on campus. Presentation will be given during the semester. (50%)

**METHOD OF EVALUATION:** Grading scale will be pass/fail and will consist of the following:
- **Final Report** - 250 pts (50%)
- **Oral presentation** - 250pts (50%)

Grading scale - Pass = 500 - 350; Fail = 349 and below.

**MAKE-UP POLICY / ATTENDANCE:** The student will work at the student’s own pace, but instructor must be informed of the student’s hours that he/she will work.

**ACADEMIC INTEGRITY (A-9.1):**
Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Definition of Academic Dishonesty
Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one’s paper without giving the author due credit.

Please read the complete policy at http://www.sfasu.edu/policies/academic_integrity.asp

Any student found cheating will be subject to the penalties as stated in the Student Code of Conduct handbook; including but not limited to a score of zero on exam, expulsion from the class or expulsion from the University.
WITHHELD GRADES SEMESTER GRADES POLICY (A-54):

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

STUDENTS WITH DISABILITIES:

To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.
CHEMISTRY - UNDERGRADUATE RESEARCH REPORT

1.) Title Page

2.) Abstract
   This is a short, quantitative discussion of the main purpose and findings of the experiment. It should be stated clearly and briefly. What was done and what results were obtained.

3.) Introduction/Literature Review
   In general, the section will consist of a brief review of the major field, and a more intensive coverage of the specific topic at hand. You want to give the background of the project which will help define your purpose.

4.) Experimental
   Should begin with a listing of where the chemicals used were obtained, what the purity was, and any prior purification of the starting material. The manufacturer and model number of all major equipment should be listed. The manner in which spectra were obtained should be included. The experimental equipment and glassware should be described, with a diagram if necessary. All diagrams should be labeled and numbered. All steps performed in the experimental procedure should be listed in the order that they were performed, in exactly the manner in which you performed them. Observations as to physical and chemical changes should be included.

5.) Results
   List all data obtained with information provided as to how the data was obtained, as well as the experimental accuracy of all measurements. The data should be compiled into tables or graphs if appropriate. All figures, spectra, and tables should be labeled, contain important parameters, and numbered. Only significant results should be presented.

6.) Discussion
   Data should be discussed and evaluated, both positively and negatively. Do not try to twist the data to fit the results you think should be obtained. Let the data "speak for itself", and evaluate the data fairly, even if the data seem to contradict theory you may have been expecting the data to follow. If theory predicted a straight line and your results confirmed the theory, then say so, remembering that the slope and the intercept may be of importance also. If the anticipated straight line was not obtained, say so, and give reasons why it was not obtained. Explain why or why the data does not agree with the theory. Bear in mind that the Discussion is the building block for the Conclusions. One should be able to read your discussion without making undue reference to your results section. Quite often the results of an experiment do not confirm theory. The reader will be interested in why the discrepancy exists, and it is the function of the writer to supply the information. Use the discussion section for comparison, generalizations, and other relations. Don't describe your graphs verbally;
discuss their significance. A discussion of possible sources of error should be
included as well as any limitations which may have affected the validity, and/or
application of the results.

7.) Conclusion
The conclusions are deductions from the results, not statements of the results.
The conclusions should be limited to the experimental work at hand, but if the
work confirms or is contrary to accepted theory, a conclusion may be written
based on that fact. Purely personal opinions or general statements should not be
written. In a well-written report, the reader will have been led to the point
where the writer’s conclusions seem obvious and inevitable.

8.) Recommendations
This section should include recommendations for changes in equipment or
procedure to improve accuracy or usefulness of the results for future work. The
basis for these recommendations should have been developed in the discussion
section. You should state the problem; describe the effect it has on the results,
and how to fix the problem.

9.) Reference (Do not use only web address references – report requires over
50% grounded references)
The majority of references must be journal articles and not websites or
textbooks. Papers with an inappropriate reference section will not be giving a
passing grade. All materials that were used in writing the laboratory report or
to gather background material should be listed. References should be
consecutively numbered, as encountered in the lab report. The reference
number should be superscripted following the phrase or idea that is being
referenced.

Journal citation: authors (last name first), title of journal (usually abbreviated,
in italics), year of publication (boldface), volume number (italics), and page
number.


Book citation: authors (last name first), title of book (italics), edition (if other
than first), publisher (followed by colon), city (and state if the city is small) of
publication, and the year of publication.

York, 1955.

10.) Appendices

Note: Report must be typed in 12 pt font, 1 in. margins