Course Description: Individual study and/or laboratory research.

Number of Credit Hours: 1 – 4 semester hours

Course Prerequisites and Co-requisites: Prerequisite: Permission of instructor. Pass-Fail grading.

Program Learning Outcomes:
3. The student will perform qualitative/quantitative chemical analyses/syntheses using modern instrumentation.
4. The student will articulate scientific information through oral communication. (depending on instructor or project)
5. The student will articulate scientific information through written communication.
6. The student will demonstrate ability to integrate knowledge content, laboratory skill, critical thinking and problem solving, and communication skills via participation in research projects.

General Education Core Curriculum Objectives: There are no specific general education core curriculum objectives in this course. This course is not a general education core curriculum course.

Course Objective: The student should demonstrate their ability to conduct chemical research.

Student Learning Outcomes: Upon completion of this course, students will be able to:
- apply the chemistry knowledge obtained during the college career. (PLO 3, 6)
- analyze experimental results based upon trends in data. (PLO 5)
- practice the safe use/handling of chemicals and their proper storage. (PLO 3)

Outline of Topics (approximate course time):
Variable: dependent on instructor and selected course content.

Text and Materials:
Professional Laboratory Notebook

COURSE CALENDAR: TBA RESEARCH ACTIVITIES IN LAB

Time Requirements: This course is for 1-4 credits and repeatable. The course involves a mentored research experience for the duration of a semester (15 weeks) designed to develop research skills through participating in research and to develop some of the skills needed for professional success after graduation. Students are expected to prepare prior to each lab (literature and concepts), attend research hours (minimum of 3 hours per week per credit hour to conduct experiments), and report results (paper, presentation). Students have required
academic components and deliverables: written work (daily notebook, research paper) and oral (presentation). These activities, inclusive of the lab expectations and academic components, average a minimum of 6 hours of work each week per credit hour. In addition, the student is expected to attend all departmental seminars.

**GRADING POLICY:**

**Notebook:** The student will develop and maintain a notebook on all research conducted during the course. This notebook will be a diary of the experiments performed. The notebook is due by Wednesday of final’s week. CHE 475/476 students are expected to keep a detailed, professional research notebook.

**Report:** This report should cover the background material for the project, data, results, and interpretation of the results. This report should be written following the guidelines of the instructor: 12 pt font, 1 inch margins; tables, figures, references, acknowledgements, etc. A summary of the ACS style guide will be provided to the student. Figures do not count toward page count. The minimum page requirement for CHE 475/476 is eight pages. The report is due by Wednesday of final’s week.

**Presentation:** A presentation of the work done in the semester must be done. The date for the presentation is Friday of dead week. The time will be arranged based on the student and faculty member’s schedule. The length of presentation for the CHE 475/476 is 20-25 minutes.

**Standard Operating Procedures (SOP)/Professionalism:** The laboratory work area is to be kept clean and neat. All safety rules must be followed. All equipment must be used properly. Anytime an absence is necessary, the student is to notify the instructor ahead of time and arrangements for make up must be made. Missing more than one scheduled work time without notifying the instructor and making up the work with result in a 15 point deduction form the semester point total. A second absence of this type will result in a 30 point deduction. Any further absences of this type will result in an F in the course. As a part of the professionalism, attendance at departmentally sponsored seminars is required.

**Method of Evaluation:** The course is Pass/Fail; however, I do keep grades for my records. The point total for the semester is 300 points. The grading scale is $\geq 270 = A$, $\geq 240 = B$, $\geq 210 = C$, $\geq 209 = D$, $< 209 = F$. 210 points are the minimum number of points needed to earn a Pass for the course.

- **Lab notebook** – 100 points
- **Report** – 100 points
- **SOP/professionalism** – 75
- **Presentation** – 25 points

**ATTENDANCE POLICY:**

Attendance of class is mandatory. For an excused absence, and make up time will be scheduled.

**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](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/](http://www.sfasu.edu/disabilityservices/).

**Classroom Behavior Policy:**

**Acceptable Student Behavior:** Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.
➢ See the SOP/professionalism above.
➢ Students who violate these rules will be asked to leave. Repeat offenders will be subject to disciplinary action in accordance with University policies as described in the Code of Student Conduct.