Course Syllabus  
Chemistry 276-010  
Anion Analysis in Water

Course Description: Organization and writing of thesis based on graduate research.

Number of Credit Hours: 1 credit semester hour.

Hour Justification: This course is for one credit and typically meets for 150 minutes a week for 15 weeks plus preparations for a final Report. Students have significant weekly, reading, correcting, and analysis of data, and Experiments. This will involve critical thinking and quantitative reasoning. Students will meet with students in lab with advisor every week. These activities average at a minimum 3-4 hours of work each week to prepare outside of classroom hours.

Course Prerequisites and Corequisites: Prerequisite: CHE 275.

Program Learning Outcomes:

1. The student will articulate scientific information through oral communication.
2. The student will articulate scientific information through written communication.
3. 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 purpose of this course is to prepare students to conduct independent research after college.

Student Learning Outcomes: The student is expected to demonstrate and apply the following concepts:

- read and analyze chemical literature thoughtfully and critically
- analyze experimental results based upon trends in data. (PLO 3, 4, 5)
- practice the safe use/handling of chemicals and their proper storage.
- communicate his/her ideas orally and in writing in a clear and concise manner (PLO 3, 4)
- recognize ethical principles in a scientific context.

Outline of Topics (approximate course time):  
Variable: dependent on instructor and selected course content.
Class Syllabus
Spring 2020
CHE 276-010
Anion Analysis in Water

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Phone: (936) 468-2386
Office: Math Building Rm 118
Student Hours: M 12 - 1; W 11-1; R 4-5; F 12 -1 and 4-5
Lecture Times: TBD and other times per appointment with student

Text and Materials:
- Laboratory Notebook

Suggested Text:
4. Published research papers from journals
5. Stephen F. Austin State University, Graduate School, Thesis Guide and Forms, http://www2.sfasu.edu/graduate/CurrentStudents/thesisguide.html

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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 CALENDAR:

Student will conduct an independent research project under the direction of the professor. The student will adhere to an agreed timeline between the student and professor. (see Table below)
**COURSE CALENDER:**

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<tr>
<th>Wk 1 &amp; 2</th>
<th>Jan 15 / Jan. 24</th>
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| Lab introduction, safety (Chapter 1 – Introduction Chapter)  
Introduction into the Lab and experiments to be done this semester.  
- Introduction into what to do in this semester. Planning the experiment for this week  
- Lab report format & planning the experiments/writing  
- Literature search and report writing formats  
**continue with Review Information from last semester be done** |

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<th>Wks 3 &amp; 4</th>
<th>1/27 - 2/7</th>
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| - Continuance of Review and start of experiments  
- Collection of samples, and protocols for analysis of anions and metal concentrations in water  
- Search literature (on metal analysis in lakes)  
  - Preparation of samples for anion and metal analyses  
  - Analyze data for analysis and acquisition of data  
**Tasks:** tables of results must be prepared and rough drafts written |

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<th>Wk 5 and 7</th>
<th>2/10 – 2/28</th>
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| - Literature search and experiments in lab  
  - Preparation of samples for anion and metal analyses  
  - Analyze data for analysis and acquisition of data |

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<th>Wk 8 &amp; 9</th>
<th>3/2 – 3/13</th>
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<tr>
<td>- Spectroscopic Analysis of anions/cations using UV-Vis, fluorescence Analysis of samples. Determinations of LODs</td>
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<th>Wk 10 &amp; 11</th>
<th>3/16 – 3/27</th>
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| - Continuance of written tasks from previous weeks  
Reports to be written and data summarized in tables and Figures |

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<th>Wk 12 &amp; 13</th>
<th>3/30 – 4/3</th>
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| - Reports and continuation of lab experiments.  
- Advisor to go through the report with student |

| Wk 12 and 13 Contd | (Dr. Onchoke and student) make corrections to the report. |

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<th>Week 13 &amp; 14</th>
<th>3/6 – 3/17</th>
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| - Write the research reports as per syllabus directions  
- Summary and draft copies of the research this semester/ accomplishments  
- Evaluation of research reports  
- Recommendations  
- Recommendations. This report is to be a self-contained and should communicate results in a precise scientific manner. |

| Wks 12, 13 and 14 and 15 | Final reports to advisor before end of semester. |

**GRADING POLICY:**

Students will demonstrate an understanding of the project subject, standard laboratory procedures, and present their final results appropriately. The student will conduct a literature review under the direction of the professor. The student will complete a thesis proposal of the research being done following the guidelines of the Stephen F. Austin State University, Graduate School. The proposal must be completed in the third week of the semester and submitted to the thesis committee for acceptance. Student will then make any corrections and resubmit if necessary.

Grading Scale:

| Standard Laboratory Procedures | 100 pts |
| Notebook | 100 pts |
| Written Thesis by March 30 (follow University guidelines and deadlines) | 200 pts |

Pass ≥ 280; Fail < 280
ATTENDANCE POLICY:
Student must adhere to the agreed upon timeline set by agreement with the professor. A regularly scheduled time will be arranged. Students must attend research as agreed upon with the professor. Any time any absence is necessary, the student is to notify the instructor ahead of time and arrangements for make up to be made.

See SOP/Professionalism (below).

Standard Operating Procedures (SOP)/Professionalism
1. The laboratory area must be kept clean.
2. All safety rules must be followed.
3. All the equipment must be used properly.
4. Any time any absence is necessary, the student is to notify the instructor ahead of time and arrangements for make up to be made.

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/.

CLASSROOM BEHAVIOR POLICY:
To ensure a classroom environment conducive to learning, any forms of classroom disruptions will not be tolerated (examples but not limited to – talking, use of cell phones/beepers, sleeping, reading other material, eating/drinking). 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.

Note: Although Syllabus is subject to change (and flexibility is permitted), strict timelines must be enforced.

Dr. Kefa Onchoke, January 17, 2020