Course Syllabus  
Chemistry 134L  
General Laboratory II

Course Description: Kinetics, spectrophotometry, quantitative/qualitative experiments.

Number of Credit Hours: 1 semester hour – 3 hours lab per week

Course Prerequisites and Corequisites: Prerequisites: CHE 133 and 133L. Co-requisite: CHE 134. Lab fee required.

Program Learning Outcomes: There are no specific program learning outcomes for this major addressed in this course. This course is a general education core curriculum course and a service course.

General Education Core Curriculum Objectives:
• To understand and apply method and appropriate technology to the study of natural sciences.
• To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.
• To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.
• To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

Course Objective: To provide students with an explanation of the basic concepts, laws and theories of chemistry and to apply them to chemistry problems through a laboratory setting. The student will demonstrate basic laboratory techniques and be able to apply them in a practical chemistry setting.

Student Learning Outcomes: Upon completion of this course, the students are expected to
• apply chemistry concepts to problem solving.
• apply quantitative methods to problem solving.
• demonstrate the knowledge of issues facing modern science, and have the confidence and laboratory skills needed to complete routine experiments.
• demonstrate the knowledge of the influence of modern technology on chemistry by using instrumentation to collect data during laboratory experiments.

Outline of Topics (approximate course time):
Orientation, Lab Safety (1 lab day)
Volumetric Analysis: Acid-Base Titration (2 lab days)
Kinetics: Determination of the order of a Reaction (2 lab days)
Qualitative analysis: Cation and anion analyses (2 lab days)
Electrochemistry: (2 lab days)
Chemical reactions (1 lab day)
GENERAL EDUCATION CORE CURRICULUM
The Texas Higher Education Coordinating Board has identified six core learning objectives: Critical Thinking Skills, Communication Skills, Empirical and Quantitative Skills, Teamwork, Personal Responsibility, and Social Responsibility. SFA is committed to the improvement of its general education core curriculum by regular assessment of student performance on these six objectives.

The chart below indicates the minimum core objectives addressed by this course using some of the topics inherent to the course and, as applicable, what assessment(s) within the course test the student’s mastery of the core objective.

<table>
<thead>
<tr>
<th>Core Objective—description of objective</th>
<th>Topic to address objective</th>
<th>Assessment of Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical Thinking Skills</strong>—To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.</td>
<td>Assessed in lecture</td>
<td>134 Assessment Artifact</td>
</tr>
<tr>
<td><strong>Communication Skills</strong>—To include effective development, interpretation and expression of ideas through written, oral, and visual communication.</td>
<td>Assessed in lecture</td>
<td>In class</td>
</tr>
<tr>
<td><strong>Empirical and Quantitative Skills</strong>—To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.</td>
<td>Assessed in lecture</td>
<td>134 Assessment Artifact</td>
</tr>
<tr>
<td><strong>Teamwork</strong>—To include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.</td>
<td>Not assessed</td>
<td></td>
</tr>
<tr>
<td><strong>Personal Responsibility</strong>—To include the ability to connect choices, actions and consequences to ethical decision-making.</td>
<td>Not Assessed</td>
<td></td>
</tr>
<tr>
<td><strong>Social Responsibility</strong>—To include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities.</td>
<td>Assessed in lecture</td>
<td>134 Assessment Artifact</td>
</tr>
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</table>

TIME REQUIREMENTS BASED UPON CREDIT HOURS:
This lab course is for one credit and typically meets for 170 minutes for lab each week for 15 weeks. In addition, the lab course also meets for a 50 minute recitation each week for 15 weeks. Students have significant weekly reading to prepare for lab each week and lab reports involving critical thinking and quantitative reasoning. Students are tested over the material via written reports, the lab notebook and lab practicals. Students are expected to prepare prior to each lab (literature and concepts), attend lab hours (conduct experiments), and report results (lab reports). Students have required academic components and deliverables: written work (lab notebook, and lab reports). These activities, inclusive of the lab expectations and academic components, average a minimum of 5 hours of work each week.
Class Syllabus  
Summer II 2019  
CHE 134L_020_021  
General Chemistry II Laboratory

CHE 134L-020 & 021  
General Chemistry II Laboratory

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Dr. Tayo Odunuga</th>
<th>Dr. Kefa Onchoke</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td><a href="mailto:odunugao@sfasu.edu">odunugao@sfasu.edu</a></td>
<td><a href="mailto:onchokekk@sfasu.edu">onchokekk@sfasu.edu</a></td>
</tr>
<tr>
<td>Phone</td>
<td>936-468-6468</td>
<td>936-468-2386</td>
</tr>
<tr>
<td>Office Location</td>
<td>Math 122</td>
<td>Math 118</td>
</tr>
<tr>
<td>Office Hours</td>
<td>MTW, 2:30 – 3:00 ; R, 11 - 12</td>
<td>MTW, 2:30 – 3:00 ; R, 11 - 12</td>
</tr>
<tr>
<td>Class Time &amp; Location</td>
<td>M-W, 10:15 – 1:05; Rm 102 Chem. Bldg.</td>
<td>M-W, 10:15 – 1:05; Rm 101 Chem. Bldg.</td>
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</table>

Course Objectives
To provide students with an explanation of the basic concepts, laws and theories of chemistry and to apply them to chemistry problems through a laboratory setting. The student will demonstrate basic laboratory techniques and be able to apply them in a practical chemistry setting.

Text and Materials
- A scientific calculator (can be graphing or non-graphing)
- Eight Blue Books 11” x 8.5”

Grading
Grades are based upon performance!

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guided Practice #1</td>
<td>10</td>
<td>July 16</td>
</tr>
<tr>
<td>Guided Practice #2</td>
<td>10</td>
<td>July 17</td>
</tr>
<tr>
<td>Project Plan Kinetics (Group Grade)</td>
<td>20</td>
<td>July 22</td>
</tr>
<tr>
<td>Project Plan Acid Base (Group Grade)</td>
<td>20</td>
<td>July 29</td>
</tr>
<tr>
<td>Project Plan Electrochemistry (Group Grade)</td>
<td>20</td>
<td>August 6</td>
</tr>
<tr>
<td>Lab Report/Post Lab Questions (6 x 20 points each)</td>
<td>120</td>
<td>Each lab</td>
</tr>
<tr>
<td>Lab practical #1</td>
<td>100</td>
<td>August 5</td>
</tr>
<tr>
<td>Lab practical #2</td>
<td>100</td>
<td>August 13</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>400</strong></td>
<td></td>
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</tbody>
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*Grading scale* 400-360 points = A, 359-320 points = B, 319-280 points = C, 279-240 points = D, ≤ 240 points = F.
Course Calendar

<table>
<thead>
<tr>
<th>Dates</th>
<th>Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tue, July 1</td>
<td>Check-in and Guided Practice #1</td>
</tr>
<tr>
<td>Wed, July 1</td>
<td>Guided Practice 2; kinetics warm-up exercise</td>
</tr>
<tr>
<td>Thur, July 18</td>
<td>No lab</td>
</tr>
<tr>
<td>Mon, July 22</td>
<td>Turn in project plan for review and corrections</td>
</tr>
<tr>
<td>Tue, July 23</td>
<td>Kinetics</td>
</tr>
<tr>
<td>Wed, July 24</td>
<td>Kinetics</td>
</tr>
<tr>
<td>Thur, July 25</td>
<td>No Lab</td>
</tr>
<tr>
<td>Mon, July 29</td>
<td>Turn in project plan Acid/Base for review and corrections</td>
</tr>
<tr>
<td>Tue, July 30</td>
<td>Acid/Base</td>
</tr>
<tr>
<td>Wed, July 31</td>
<td>Acid/Base and Review for Lab Practical</td>
</tr>
<tr>
<td>Thur, August 1</td>
<td>No Lab</td>
</tr>
<tr>
<td>Mon, August 5</td>
<td>Lab Practical #1</td>
</tr>
<tr>
<td>Tue, August 6</td>
<td>Turn in Project Plan for Electrochemistry for review and corrections</td>
</tr>
<tr>
<td>Wed, August 7</td>
<td>Electrochemistry</td>
</tr>
<tr>
<td>Thur, August 8</td>
<td>No Lab</td>
</tr>
<tr>
<td>Mon, August 12</td>
<td>Electrochemistry/Review for Lab practical</td>
</tr>
<tr>
<td>Tue, August 13</td>
<td>Lab practical #2</td>
</tr>
<tr>
<td>Wed, August 14</td>
<td>Check out</td>
</tr>
<tr>
<td>Thur, August 15</td>
<td>No Lab</td>
</tr>
<tr>
<td>Fri, August 16</td>
<td>No Lab</td>
</tr>
</tbody>
</table>

**Project Plans**

Working in groups of four, the students will produce three project plans. Having to write a project plan forces the group to think through the problem presented. Project plans will be word processed. The entire document should be of high quality using superscripts, subscripts, equation editors, etc… as appropriate.

*The title page* will include the title of the project, the semester, the course, the group members, group member roles, and a short description of what will be accomplished each day.

The *first section* will be a statement of the problem in paragraph form followed by a paragraph outlining how the problem will be solved. The section should end with a concise purpose statement.

*Section two* will include a description of the relevant chemistry including chemical equations and/or mathematical equations.

*Section three* will include a description of the techniques to be used. The purpose of this section is for you to visualize how to perform each of the techniques—include diagrams and write enough so that you get it correct! The most appropriate reference for this section is the lab manual itself.

*Section four* will include a detailed procedure. Use bullets, flow charts, tables, and/or numbers to convey the procedure.

*Section five* will include sample data tables, numbers you would expect to generate from the data, and how those numbers will generate the answer required (sample calculations).

*Section six* includes all references. References must be appropriate and include text book(s), lab text(s) and peer-reviewed scientific journal articles; URLs are not acceptable. The format in the following web-link must be used for referencing:

http://www.jbc.org/site/misc/ifora.xhtml#references. Copy and paste the link into a browser to view the guidelines.
Laboratory Notebook:
Each individual student must keep a lab notebook. The lab notebook will contain the following: title and date of the experiment, the group members, the purpose statement, procedure, data and results, and a discussion/conclusion section. Finally, if any post lab questions are given they must be answered in the lab notebook. Students should use 1 blue book per lab.

Attendance Policy:
During the summer each lab session is equivalent to one and a half weeks of work during a long semester; therefore, missing a lab session is missing a significant amount of material. The student is expected to come to lab and complete the work. One absence will be accommodated on an individual basis, IF it is an excused absence (you must talk to the faculty member if you wish an excused absence), otherwise it will count as a zero for the day’s work. You will be allowed to use data obtained by the other members of the group. Additional absences will be dealt with as the need arises. If you do nothing about an unexcused absence by the end of the term (last day of class, not finals), it will count as a no-pass for the course. If you leave the lab before finishing the experiment, it is an unexcused absence, and will be an automatic zero for the day (unless excused). Absences may be assigned to anyone that disrupts class, sleeps in class, or consistently comes in late or leaves early.

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

Note: The instructors reserve the right to change the syllabus if and when necessary. The instructors will formally inform students of any changes to the syllabus.

Dr. ‘Tayo Odunuga and Dr. Kefa Onchoke
July 9, 2019