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Technical College of the Lowcountry
921 Ribaut Road
Beaufort, SC 29901

Arts & Sciences Division
Building 9, Room 102
843-525-8281

CHM 100

Introductory Chemistry

Course Description
This is an introductory course in general chemistry and principles of chemistry. Emphasis is placed on mathematical solutions and laboratory techniques. Non-degree credit.

Prerequisites: ENG 100, MAT 102, RDG 100.

4.0 Cr (2.5 lect/pres, 3.0 lab, 0 other)

Course Focus
This course is designed to prepare students to succeed in other chemistry courses, so that they can meet the college's general education core competencies in scientific reasoning. Upon completion of this course the student will be able to have an introductory knowledge of basic chemical concepts and principles. Students will learn some basic chemical concepts and use scientific reasoning in their study of introductory chemistry.

Text and References
Timberlake, Karen C. & William Timberlake, Basic Chemistry, 2nd Edition. Prentice Hall, 2008.
ISBN: 0805344691 / 978-0805344691.

Timberlake, Karen C., Lab Manual for Chemistry: An Introduction to General, Organic, and Biological and Chemistry, 9th Edition. Prentice Hall, 2006. ISBN: 0805330259 / 978-0805330250.

Course Goals
The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives. (*designates a CRUCIAL goal)

1. Design scientific investigation
2. Practice laboratory safety
3. Use scientific instruments

4. Organize laboratory data
5. Interpret laboratory data
6. Evaluate scientific results
7. Apply significant digit rules
8. Separate chemical mixture
9. Represent chemicals
10. Summarize atomic properties
11. Name compounds
12. Calculate using mole
13. Determine mass
14. Determine percent composition
15. Balance chemical equations
16. Predict reaction products
17. Write net ionic equations
18. Calculate energy released
19. Identify reaction energy changes
20. Trace heat using calorimetry
21. Illustrate electron configurations
22. Summarize periodic trends
23. Determine ionization energy
24. Predict compound shape
25. Predict compound bonding
26. Relate intermolecular forces to atomic shape
27. Link intermolecular force and phases
28. Analyze atom electro negativity
29. Calculate boiling point elevation
30. Calculate freezing point depression
31. Construct heating and cooling curves
32. Apply gas laws
33. Explain gas behavior
34. Apply ideal gas law
35. Draw solution dynamics
36. Define solubility
37. Compare solvent solubilities
38. Predict solution concentrations
39. Summarize pressure and temperature effects on solutions
40. Interpret solubility curve
41. Apply thermo chemical laws
42. Determine factors affecting reaction rate
43. Explain activation energy
44. Understand chemical equilibrium
45. Characterize salts acids and bases
46. Distinguish between strong and weak acids and bases
47. Calculate solution ph
48. Use titration
49. Summarize redox process
50. Explain half-life concept

51. Compare radiation types
52. Compare nuclear reactions
53. Classify organic compounds
54. Classify organic reactions
55. Explain carbon bonding characteristics
56. Illustrate hydrocarbon structures
57. Identify polymer structure

Student Contributions

Upon successful completion of this course the student should be competent to perform the following;
1. Explain the characteristics, measurement, classification, and composition of matter in its different states.
2. Describe the characteristics, nomenclature, formula writing, properties, and structure of atoms/elements and molecules/compounds.
3. Describe the characteristics, mechanisms, and balancing of chemical reactions and bonding.
4. Perform calculations of molecular weight, molarity, and percent by weight, grams, moles, dilutions, atoms, pH and conversions of metric units.
5. Describe the behavior/properties of aqueous solutions, acids, bases, oxidizers, and reducers.
6. Analyze important categories of reactions in air, water, soil, living things, and industry.
7. Describe the properties and composition of hydrocarbons and their functional groups.
8. Interpret organic chemical nomenclature and structural formulas.
9. Utilize standard laboratory equipment such as burets, pipets, electronic balances and meters, etc., and methods such as calibrating, titrating, filtration, evaporation, heating, etc., for the measurement and analysis of compounds.
10. Discuss the importance and application of chemistry in the home, medicine, the environment, and industry.
11. Describe characteristic compounds of living things.

Student Contributions:
Classes are designed to employ a variety of teaching techniques. In order to maximize learning, required readings should be done prior to a unit. If a student is falling behind in lab performance or academic achievement, it is imperative to seek immediate assistance from the instructors.

Course Evaluation

- Student progress will be evaluated through a series of tests, quizzes in-class and out of class assignments and will be detailed in the attachment to this syllabus.
- Blackboard: lecture notes, handouts, podcasts, study hints, tutor information, syllabi, and other course information is available on the course blackboard page.
- Laboratory Component: This course has a required lab component which supplements the information presented in lecture. The lab will be independently evaluated primarily through lab practicals, in class and out of class lab assignments (such as research papers). For specific details about lab evaluations, please refer to the attachment to this syllabus.

GRADING SCALE:
90-100 = A

80-89 =	B
70-79 =	C
60-69 =	D
Below 60=	F

Course Schedule
The class meets for 2.5 lecture/presentation hours and 3 lab hours per week.

ADA STATEMENT
The Technical College of the Lowcountry provides access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation, contact the counselor for students with disabilities at (843) 525-8219 or (843) 525-8242 during the first ten business days of the academic term.

ACADEMIC MISCONDUCT
There is no tolerance at TCL for academic dishonesty and misconduct. The College expects all students to conduct themselves with dignity and to maintain high standards of responsible citizenship.

It is the student's responsibility to address any questions regarding what might constitute academic misconduct to the course instructor for further clarification.

The College adheres to the Student Code for the South Carolina Technical College System. Copies of the Student Code and Grievance Procedure are provided in the *TCL Student Handbook*, the Division Office, and the Learning Resources Center.

ATTENDANCE
The College's statement of policy indicates that students must attend ninety percent of total class hours or they will be in violation of the attendance policy.

- Students not physically attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
- Students taking an online/internet class must sign in **and** complete and assignment designated by the instructor within the first ten calendar days from the start of the semester to indicate attendance in the class. Students not attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
- Reinstatement requires the signature of the division dean.

- In the event it becomes necessary for a student to withdraw from the course ***OR*** *if a student stops attending class*, **it is the student's responsibility to contact the instructor via e-mail requesting to be withdrawn from the class.** Withdrawing from class may have consequences associated with financial aid and time to completion. Students are strongly encouraged to consult with Financial Aid prior to withdrawing from any class, particularly if the student is currently on a warning or probation status.
- When a student exceeds the allowed absences, the student is in violation of the attendance policy. The instructor MUST withdraw the student with a grade of "W", "WP", or "WF" depending on the date the student exceeded the allowed absences and the student's progress up to the last date of attendance

or

- Under extenuating circumstances and at the discretion of the faculty member teaching the class, allow the student to continue in the class and make-up the work. This exception must be documented at the time the allowed absences are exceeded.
- Absences are counted from the first day of class. There are no "excused" absences. All absences are counted, regardless of the reason for the absence.
- A student must take the final exam or be excused from the final exam in order to earn a non-withdrawal grade.
- A copy of TCL's STATEMENT **OF POLICY NUMBER:** 3-1-307 CLASS ATTENDANCE (WITHDRAWAL) is on file in the Division Office and in the Learning Resources Center.

ONLINE ATTENDANCE PROCEDURE

For all online courses, students must complete an assignment designated by the instructor during the first week of classes. The instructor will drop the student from the course if the initial assignment is not completed.

Instructors will withdraw students from the class when 90% attendance is not maintained. Attendance in an online course is defined by regular course access and by timely completion of assignments as required by the instructor. Each student will be expected to access the web class at least once a week and complete 90% of assignments on time. Additional access is encouraged and may be necessary for successful completion of classes.

Failure to log in and complete assignments will result in the student being withdrawn from the course. The instructor will assign a grade of "W," "WP," or "WF" based upon the student's academic standing as the last date of attendance, which is the last login. Students are responsible for any financial matters associated with an administrative withdrawal. If a fails to email the instructor (using the my.tcl.edu email account) requesting to be dropped from the course and has not submitted the initial assignment required during the first week of class, the instructor 2ill assign a "Never Attended" code in the student information system (web-advisor) no later than ten calendar days after the first day of the class. Students who are dropped as a result of never attending the course are still responsible for all fees associated with the course.

HAZARDOUS WEATHER

In case weather conditions are so severe that operation of the College may clearly pose a hardship on students and staff traveling to the College, notification of closing will be made through the following radio and television stations: WYKZ 98.7, WGCO 98.3, WGZO 103.1, WFXH 106.1, WWVV 106.9, WLOW 107.9, WGZR 104.9, WFXH 1130 AM, WLVH 101.1, WSOK 1230 AM, WAEV 97.3, WTOC TV, WTGS TV, WJWJ TV, and WSAV TV. Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. http://www.tcl.edu/current-students/text-alert

EXTRA:

Emergency Text Message Alert

Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. Participants receive immediate notification of emergency events and weather cancelations via text messaging on their cell phones. Participants can also opt in to receive non-emergency news and announcements. Go to www.tcl.edu. On the homepage, click on "emergency TextAlert at TCL" and fill out the form or go to http://www.tcl.edu/current-students/text-alert

GRADING METHODOLOGY

The final grade must be 70 or more (a grade "C" or better) in order to pass the course and progress to the next course. Students absent from an examination or presentation will receive a "0" grade for the examination unless other arrangements are made with the individual instructor prior to the examination or presentation day or on the examination or presentation day before the test/presentation is scheduled to be given.

The student is responsible for notifying the instructor for the reason of the absence. It is also the responsibility of the student to contact the appropriate instructor to arrange to make up the examination. Arrangements may be completed by telephone.

If the instructor is not available, a message should be left on the instructor's voice mail AND with another member of the faculty or administrative assistant. The make-up exam will be scheduled and the instructor will decide the method of examination. Messages sent by other students are unacceptable.

SAFETY

Purpose

The purpose of this safety addendum is to provide each student with safety guidelines during an incident, emergency, or disaster at TCL. In addition, it provides students guidelines for lockdown procedures, evacuation procedures, and active shooter.

Definitions

An incident is any event, potential or actual, that may impact normal operations but has no immediate health or life threatening consideration or serious effect on the overall functional capacity of the College. An event of this nature should be reported to the Office of the Vice President for Administrative Services. Also notify the off-site campus administrator if applicable.

An emergency is any incident, potential or actual, which may endanger life or health or which affects an entire building or buildings, and will disrupt the overall operations of the College. Outside emergency services will probably be required, as well as major efforts from campus support services. Major policy considerations and decisions will usually be required from the college administration during times of crises. An emergency should be reported immediately by directly using **911** if life or health/injury considerations exist and then to the Office of the President or Vice President for Administrative Services as quickly as possible. Also notify the off-site campus administrator if applicable.

A disaster is any event or occurrence that has taken place and has seriously impaired or halted the operations of the College. In some cases, mass personnel casualties and severe property damage may be sustained. A coordinated effort of all campus-wide resources is required to effectively control the situation. Outside emergency services will be essential. In all cases of disaster, an Emergency Control Center will be activated, and the appropriate support and operational plans will be executed. The disaster should be immediately reported, first by calling **911** and then to the Office of the President or Vice President for Administrative Services. Also notify the off-site campus administrator if applicable.

Types of Emergencies

- Hurricane
- Tornado
- Fire
- Biochemical or Radiation Spill
- Explosion/Bomb

- Downed Aircraft (crash which directly impacts campus operations)
- Utility Failures
- Violent or criminal behavior
- Psychological Crisis

Procedures:

Active Shooter
Run/hide/fight (http://www.fbi.gov/about-us/cirg/active-shooter-and-mass-casualty-incidents/run-hide-fight-video)

Building Evacuation
1. Building evacuations occur when an alarm sounds and/or upon notification by Security or the Emergency Director.
2. When the building evacuation alarm is activated during an emergency, individuals should exit according to the building evacuation plan and alert others to do the same.
3. Once outside, individuals should proceed to a clear area that is at least 500 feet away from the affected building. Streets, fire lanes, hydrant areas and walkways should be kept clear for emergency vehicles and personnel.
4. Individuals should not return to an evacuated building unless told to do so by Security or the Emergency Director.
5. Individuals should assist persons with disabilities in exiting the building. Elevators are reserved for disabled persons

Campus Evacuation
1. A uniformed Security Guard, the Emergency Director, or an Emergency Resource Team member will announce evacuation of all or part of the campus grounds.
2. All persons (students and staff) are to immediately vacate the campus, or in the case of a partial evacuation relocate to another part of the campus grounds as directed.

Lockdown
1. Clear the halls
2. Report to the nearest classroom/office
3. Assist those needing special assistance
4. Ensure classroom/office doors are closed and locked
5. Turn off lights
6. Stay away from doors and windows (out of the line of sight)
7. BE QUIET and follow instructor's directions
8. Silence cell phones
9. Wait for the "All Clear" before leaving