



# INSTRUCTIONAL PACKAGE

CHM 110

College Chemistry I

Effective Term  
Fall 2019. Spring 2020

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## Part I: Course Information

Effective Term: 2019-2020

COURSE PREFIX: CHM 110

COURSE TITLE: College Chemistry I

CONTACT HOURS: 3-3

CREDIT HOURS: 4

### **RATIONALE FOR THE COURSE:**

Completion of CHM 110 enables the student to gain an appreciation and working knowledge of fundamental principles in the area of general chemistry. These concepts are approached through the development of problem-solving skills, which helps prepare students for future careers in science fields. Additionally, this course is designed to satisfy freshman-level chemistry requirements at other colleges.

### **COURSE DESCRIPTION:**

This is the first course in a sequence which includes the following topics: atomic and molecular structure, nomenclature and equations, properties, reactions and states of matter, stoichiometry, gas laws, solutions, and equilibria. This course is transferable to public senior institutions as part of the South Carolina Commission on Higher Education Statewide Articulation Agreement.

### **PREREQUISITES/CO-REQUISITES:**

Credit level MAT 101 Minimum Grade of C or Credit level MAT 101 Minimum Grade of TC or Credit level MAT 175 Minimum Grade of C or Credit level MAT 175 Minimum Grade of TC or Credit level MAT 102 Minimum Grade of C or Credit level MAT 102 Minimum Grade of TC or Credit level MAT 110 Minimum Grade of C or Credit level MAT 110 Minimum Grade of TC or Credit level MAT 155 Minimum Grade of C or Credit level MAT 155 Minimum Grade of TC or ACT Math 15 or SAT Mathematics 400 or New SAT Mathematics 420 or ACCUPLACER Elementary Algebra 040 or Multiple Measures Math 1 or COMPANION Elementary Algebra 040 or COMPANION Arithmetic 024 or ACCUPLACER Arithmetic 024 or New ACCUPLACER Arithmetic 220

**Online/Hybrid** courses require students to complete the DLI Online Student Orientation prior to completing an online course. The DLI Online Student Orientation can be found in WaveNet, under the My Student tab.

### **REQUIRED MATERIALS:**

Please visit the Bookstore online site for most current textbook information. Use the direct link below to find textbooks.

[BOOKSTORE](#).

Enter the semester, course prefix, number and section when prompted and you will be linked to the correct textbook.

## **ADDITIONAL REQUIREMENTS:**

A scientific calculator will be needed for in-class use and for tests.

Laboratory safety glasses will be provided, but students may bring their own pair if desired.

For Hybrid/Online Students Only: Each student will be required to view an orientation PowerPoint presentation during the first week of class. This presentation can be found on the course homepage in D2L under News. After viewing the presentation, all online students must complete the orientation quiz, which can be found under the dropdown assignment menu. A student will not be considered officially enrolled in the course until the presentation has been viewed and the quiz completed with a 100% score. Any submitted work from the student including discussion posts, assignments, etc. will not be given a grade until the presentation has been viewed and the quiz has been submitted. Failure to view the presentation and take the quiz before midnight on the last day to add/drop classes will result in the student being automatically dropped from the course.

## **TECHNICAL REQUIREMENTS:**

Access to Desire2Learn (D2L), HGTC's student portal for course materials.

WaveNet and D2L email access.

## **STUDENT IDENTIFICATION VERIFICATION**

Students enrolled in online courses will be required to participate in a minimum of one (1) proctored assignment and/or one (1) virtual event to support student identification verification. Please refer to your Instructor Information Sheet for information regarding this requirement.

## **CLASSROOM ETIQUETTE:**

As a matter of courtesy to other students and your professor, please turn off cell phones and other communication/entertainment devices before class begins. If you are monitoring for an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

**NETIQUETTE:** is the term commonly used to refer to conventions adopted by Internet users on the web, mailing lists, public forums, and in live chat focused on online communications etiquette. For more information regarding Netiquette expectations for distance learning courses, please visit [Online Netiquette](#).

## **ACADEMIC DISHONESTY:**

All forms of academic dishonesty, as outlined in the Student Code in the HGTC catalog, will NOT be tolerated and will result in disciplinary action. Anyone caught cheating or committing plagiarism (Defined in the code as: "The appropriation of any other person's work and the unacknowledged incorporation of that work in one's own work offered for credit") will be given a grade of a zero for that assignment and reported to the Senior VP of Academic Affairs, in accordance with the student handbook. A second offense will result in the student being withdrawn from the course with a "WF" and charges being filed with the Chief Student Services Officer.

## Part II: Student Learning Outcomes

### COURSE LEARNING OUTCOMES and ASSESSMENTS\*:

A student will demonstrate an understanding of scientific measurement by:

- measuring masses and volumes using appropriate lab instruments.
- determining the number of significant figures in a measured quantity, and retaining the correct number of significant figures in a calculation involving measured quantities.
- making use of scientific notation when appropriate.
- solving problems related to measurement, including density problems.
- solving unit conversion problems using the factor-label method.

A student will demonstrate an understanding of physical and chemical properties by:

- distinguishing between physical and chemical properties.
- identifying the states of matter.
- distinguishing between homogeneous and heterogeneous mixtures.
- distinguishing between physical and chemical changes.
- defining the terms element, compound, and mixture.

A student will demonstrate an understanding of atomic structure by:

- distinguishing among the terms atom, ion, and isotope.
- defining the terms mass number and atomic number.
- distinguishing between atoms and molecules.
- identifying and describing the subatomic particles (protons, neutrons, and electrons).
- interpreting isotopic notation to identify particular isotopes of a particular element.
- utilizing the periodic table to write electron configurations by level and sublevel.
- utilizing the periodic table to illustrate trends in atomic size, ionization energy, and electron affinity.
- demonstrating the ability to write Lewis electron dot symbols for elements.

A student will demonstrate an understanding of molecular structure and chemical bonding by:

- distinguishing between cations and anions, and between mono- and polyatomic ions.
- relating valence electron structure to chemical properties of the elements.
- illustrating and interpreting common ionic, polar covalent, and nonpolar covalent bonds in molecules.
- creating Lewis electron dot structures to represent simple ionic and covalent molecules.
- illustrating the concept of resonance in molecular bonding.
- utilizing percent composition data to determine empirical formulas, and using molecular formulas to determine percent composition.
- determining compound names when given the formula and vice-versa.
- determining from molecular formula whether or not a substance is an electrolyte.
- distinguishing among acids, bases and salts based on formula.

A student will demonstrate an understanding of the mole concept by:

- defining a mole in terms of Avogadro's number and atomic/molecular mass.
- relating mathematically the units of moles, grams, and molecules.
- defining molarity and using molarity calculations to determine the concentrations of solutions.
- interpreting chemical equations in terms of mole and gram amounts.

identifying limiting reactants and using them to calculate the theoretical yield of reaction products.

A student will understand and utilize chemical equations to represent chemical reactions by:

distinguishing between reactants and products.

balancing reaction equations.

identifying acid-base and precipitation reactions and predicting their products.

utilizing solubility rules to predict the outcome of precipitation reactions.

solving titration calculation problems based on balanced chemical equations.

***\*Students – please refer to the Instructor’s Course Information sheet for specific information on assessments and due dates.***

## **Part III: Grading and Assessment**

### **EVALUATION OF REQUIRED COURSE MEASURES/ARTIFACTS\***

Students’ performance will be assessed and the weight associated with the various measures/artifacts are listed below.

#### **EVALUATION\***

Lecture	75%
Lab	25%
Total	100%

***\*Students, for the specific number and type of evaluations, please refer to the Instructor’s Course Information Sheet.***

### **GRADING SYSTEM:**

Please note the College adheres to a 10 point grading scale A = 100 – 90, B = 89- 80, C = 79 – 70, D = 69 – 60, F = 59 and below.

Grades earned in courses impact academic progression and financial aid status. Before withdrawing from a course, be sure to talk with your instructor and financial aid counselor about the implications of that course of action. Ds, Fs, Ws, WFs and Is also negatively impact academic progression and financial aid status.

The Add/Drop Period is the first 5 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format courses. Please refer to the academic calendar for deadlines for add/drop ([ACADEMIC CALENDAR](#)). You must attend at least one meeting of all of your classes during that period. If you do not, you will be dropped from the course(s) and your Financial Aid will be reduced accordingly.

## **Part IV: Attendance**

Horry-Georgetown Technical College maintains a general attendance policy requiring students to be present for a minimum of 80 percent (80%) of their classes in order to receive credit for any course. Due to the varied nature of courses taught at the college, some faculty may require up to 90 percent (90%) attendance. Pursuant to 34 Code of Federal Regulations 228.22 - Return to Title IV Funds, once a student has missed over 20% of the course or has missed two (2) consecutive weeks, the faculty is obligated to withdraw the student and a student may not be permitted to reenroll. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

**For online and hybrid courses**, check your Instructor's Course Information Sheet for any required on-site meeting times. Please note, instructors may require tests to be taken at approved testing sites, if you use a testing center other than those provided by HGTC, the center may charge a fee for its services.

### **Lecture Attendance:**

For a 15-week course (fall and spring), the allowed number of absences for a MW or TR class is as follows: 6 absences are allowed for lecture, regardless of reason. For a lecture class that meets once a week, the allowed number of absences is three (3). When a student surpasses the allowed number of absences, the student will be dropped automatically from the course with a W or a WF. Remember, an absence is an absence, no matter if it is excused or not!

### **Lab Attendance:**

Students are allowed two (2) lab absences for a lab that meets weekly. When a student surpasses the allowed number of absences, the student will be dropped automatically from the course with a W or a WF.

### **Online/Hybrid Attendance:**

Students enrolled in distance learning courses (hybrid and online) are required to maintain contact with the instructor on a regular basis to be counted as "in attendance" for the course. All distance learning students must participate weekly in an Attendance activity in order to demonstrate course participation. Students showing no activity in the course for two weeks (these weeks do not need to be consecutive) will be withdrawn due to lack of attendance.

### **Lab Attendance for Hybrid Courses:**

Students in hybrid classes in which labs only meet 5 or 6 times during the semester, must attend all lab sessions for its entirety. Failure to attend one lab will result in immediate withdrawal. Students in hybrid classes where labs meet every week, you are allowed one lab absence. When a student surpasses the allowed number of absences, the student will be dropped automatically from the course with a W or a WF.

## **Part V: Student Resources**



## The Student Success and Tutoring Center (SSTC)

The SSTC offers to all students the following **free** resources:

- 1. Academic coaches** for most subject areas, **Writing Center Support**, and **college success skills**.
- 2. On-line student success and academic support resources.**

Visit the SSTC website: [Student Success & Tutoring Center](#) and visit the student services tab in your WaveNet account to schedule appointments using TutorTrac. For more information, call: SSTC Conway, 349-7872; SSTC Grand Strand, 477-2113; and SSTC Georgetown, 520-1455 or go to the [Online Resource Center](#) to access on-demand resources any time.

## TECH Central – Student Information Center



TECH Central provides quality enrollment and collegiate guidance for students, faculty, and staff. Services include phone, walk-in, and online technical support for technology training and troubleshooting. Additionally, we offer support in Office 365, Outlook E-mail setup, and ID cards.

**Phone:** 843-349-5340

**Email:** [techcentral@hgtc.edu](mailto:techcentral@hgtc.edu)

**Text:** 843-357-8552

**TECH Talk (Live Chat):** Located on the "Home" tab in WaveNet.

**Website:** [www.hgtc.edu/techcentral](http://www.hgtc.edu/techcentral)

### Locations:

Conway Building 1100, Room 132D

Grand Strand Building 200, Room 136

**Student Testing:** (If course is offered in multiple format include this section, delete if only F2F sections are offered.)

Testing in an **online/hybrid** course may be accomplished in a variety of ways:

- Test administered within D2L
- Test administered in writing on paper
- Test administered through Publisher Platforms

Further more tests may have time limits and/or require a proctor.

Proctoring can be accomplished either face-to-face at an approved site or online through RPNOW, our online proctoring service. To find out more about proctoring services, please visit the [Online Testing](#) section of the HGTC's Testing Center webpage.

The **Instructor Information Sheet** will have more details on test requirements for your course.

## Disability Services:

HGTC is committed to providing an accessible environment for students with disabilities. Inquiries may be directed to Beth Havens, Director of Student Development on the Conway Campus Jaime Davis, Counselor/Advisor on the Georgetown Campus or Kristin Griffin, Counselor on the Grand Strand Campus. These individuals will review documentation of the student's disability and, in a confidential setting with the student, develop an educational accommodation plan.

Note: It is the student's responsibility to self-identify as needing accommodations and to provide acceptable documentation. After a student has self-identified and submitted documentation of a disability, accommodations may be determined, accepted, and provided.

### **Statement of Equal Opportunity/Non-Discrimination Statement**

Horry-Georgetown Technical College prohibits discrimination and harassment, including sexual harassment and abuse, on the basis of race, color, sex, national or ethnic origin, age, religion, disability, marital or family status, veteran status, political ideas, sexual orientation, gender identity, or pregnancy, childbirth, or related medical conditions, including, but not limited to, lactation in educational programs and/or activities.

Inquiries regarding the non-discrimination policies: Students and prospective student inquiries concerning Section 504, Title II, and Title IX and their application to the College or any student decision may be directed to the Vice President for Student Affairs, Dr. Melissa Batten, VP Student Affairs, Title IX Coordinator, Building 1100, Room 107A, Conway Campus, PO Box 261966, Conway, SC 29528-6066, 843-349-5228, [Melissa.Batten@hgtc.edu](mailto:Melissa.Batten@hgtc.edu). Employee and applicant inquiries concerning Section 504, Title II, and Title IX and their application to the College may be directed to the Vice President for Human Resources, Jacquelyne Snyder, VP Human Resources, Section 504, Title II, and Title IX Coordinator, Building 200, Room 212A, Conway Campus, PO Box 261966, Conway, SC 29528-6066, 843-349-5212, [Jacquelyne.Snyder@hgtc.edu](mailto:Jacquelyne.Snyder@hgtc.edu).

### **Title IX Requirements**

All students (as well as other persons) at Horry-Georgetown Technical College are protected by Title IX—regardless of their sex, sexual orientation, gender identity, part- or full-time status, disability, race, or national origin—in all aspects of educational programs and activities. Any student, or other member of the college community, who believes that he/she is or has been a victim of sexual harassment or sexual violence may file a report with the college's Chief Student Services Officer, campus law enforcement, or with the college's Title IX Coordinator, or designee.

\*Faculty and Staff are required to report incidents to the Title IX Coordinators when involving students. The only HGTC employees exempt from mandatory reporting are licensed mental health professionals (only as part of their job description such as counseling services).

<b>Inquiries regarding the non-discrimination policies:</b>	
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<p>Student and prospective student inquiries concerning Section 504, Title II, and Title IX and their application to the College or any student decision may be directed to the Vice President for Student Affairs.</p>	<p>Employee and applicant inquiries concerning Section 504, Title II, and Title IX and their application to the College may be directed to the Vice President for Human Resources.</p>
<p><b>Dr. Melissa Batten, VP Student Affairs</b>  <i>Title IX Coordinator</i></p> <p>Building 1100, Room 107A, Conway  Campus  PO Box 261966, Conway, SC 29528-6066  843-349-5228  <a href="mailto:Melissa.Batten@hgtc.edu">Melissa.Batten@hgtc.edu</a></p>	<p><b>Jacquelyne Snyder, VP Human Resources</b>  <i>Section 504, Title II, and Title IX Coordinator</i></p> <p>Building 200, Room 212A, Conway Campus  PO Box 261966, Conway, SC 29528-6066  843-349-5212  <a href="mailto:Jacquelyne.Snyder@hgtc.edu">Jacquelyne.Snyder@hgtc.edu</a></p>