



TENTATIVE—SUBJECT TO CHANGE

**CHEM1151 Survey of Inorganic Chemistry
COURSE SYLLABUS
Spring Semester 2022 (202214)**

COURSE INFORMATION

Credit Hours/Minutes: 3
Campus/Class Location: Swainsboro
Class Meets: M at 1:30-4:30
Course Reference Number (CRN): 40302

INSTRUCTOR CONTACT INFORMATION

Instructor Name: Professor Shirley Holman
Office Location: Building 8 Swainsboro campus #8170
Office Hours: By Appointment
Email Address: sholman@southeasterntech.edu
Tutoring Hours: Tuesdays 1:30pm-2:30pm

SOUTHEASTERN TECHNICAL COLLEGE'S (STC) CATALOG AND HANDBOOK

Students are responsible for all policies and procedures and all other information included in Southeastern Technical College's [Catalog and Handbook](https://catalog.southeasterntech.edu/college-catalog/downloads/current.pdf) (<https://catalog.southeasterntech.edu/college-catalog/downloads/current.pdf>).

REQUIRED TEXT

Mastering Chemistry with Pearson eText – Instant Access – for General, Organic, and Biological Chemistry: Structures of Life, 6th Edition, Timberlake 2016; Electronic Package: 9780134812991.

REQUIRED SUPPLIES & SOFTWARE

Notebook
*3x5 cards
Writing utensil
*Colored pens and/or variety of highlighters
Scientific Calculator
PC, Laptop, or tablet
eText

* highly recommended items

Students should not share login credentials with others and should change passwords periodically to maintain security.

COURSE DESCRIPTION

This course introduces basic chemical principles and concepts which explain the behavior of matter. Topics include measurements and units, structure of matter, chemical bonding, chemical reactions, gas laws, liquid mixtures, acids and bases, salts and buffers, and nuclear chemistry.

MAJOR COURSE COMPETENCIES

1) Measurements and Units; 2) Structure of Matter; 3) Chemical Bonding; 4) Chemical reactions; 5) Gas Laws; 6) Liquid Mixtures; 7) Acids and Bases; 8) Salts and Buffers; 9) Nuclear Chemistry

PREREQUISITE(S)

MATH 1101 – Mathematical Modeling or MATH 1111 – College Algebra

COURSE OUTLINE

1. Measurement and Units
2. Structure of Matter
3. Chemical Bonding
4. Chemical Reactions
5. Gas Laws
6. Liquid Mixtures
7. Acids and Bases
8. Salts and Buffers
9. Nuclear Chemistry

GENERAL EDUCATION CORE COMPETENCIES

Southeastern Technical College has identified the following general education core competencies that graduates will attain:

1. The ability to utilize standard written English.
2. The ability to solve practical mathematical problems.
3. The ability to read, analyze, and interpret information.

STUDENT REQUIREMENTS

Homework: assignments are to be completed on the Mastering Chemistry website. When first generating a login ID for Mastering Chemistry, use your legal name as it appears on the course roster. Students are expected to

complete all homework assignments by their respective due dates. All homework assignments are available at the start of the semester, so students have the ability to advance through the topics once the current one is mastered. Because of this availability, there is no excuse for any late assignments, thus all homework assignments will be graded as is by their respective due date. Students get 6 attempts to answer homework questions correctly with 3%-point deduction with each attempt. NO credit is awarded for wrong answers to True/False questions. For Multiple Choice questions with 5 choices receive a 25%-point deduction with each attempt. Students may still access the assignments for review and practice following the due date, but no further credit will be awarded. **The course ID is holman61294.**

Entry/Exit Tickets (E-ticket): It is required that all students come to class prepared with the necessary materials. Additionally, students are assigned chapters to read from the text prior to that chapter's discussion. To aid in adherence, students will have a minimum of 9 Entry/Exit Tickets. Entry/Exit Tickets will have one to two questions about the assigned reading or credit instructor will check for compliance through Pearson My Lab. E-ticket will be counted as a quiz grade (quizzes are 40% of Overall grade; 9 entry tickets = 9 quiz grades). Students will not be permitted to make-up any missed Entry/Exit Tickets for any reason.

Virtual Study Sessions: Student success in this course is important. To help you be successful, virtual tutoring is offered every Tuesday at 1:30 pm unless otherwise indicated by the instructor. There are two chapters that we will cover during this course that will have a mandatory study (tutoring) session. The skills taught in these chapters are crucial to the students' ability to succeed in this course. The instructor has deemed it necessary to add this extra time dedicated to instruction and skill practice. There is an assignment attached to these sessions that will count as a homework assignment. The instructor will inform you of the due date.

Quizzes: Quizzes are administered in person. Students will be permitted to make-up a missed quiz due to a confirmed sickness or unforeseen incident on the Tuesday following the students return to class. It is the student's responsibility to make an appointment with the instructor to make-up the quiz. Students will receive a zero for missed quizzes.

Mid-term & Final: Assessments will be given in person. No make-ups will be administered for these exams.

COVID-19 MASK REQUIREMENT

Regardless of vaccination status, students are highly encouraged to wear masks or face coverings while in a classroom or lab at Southeastern Technical College. Masking may be implemented in some program areas (i.e. Health Sciences and Cosmetology) where students, faculty, and clients are in close proximity and social distancing cannot be maintained. This measure is being implemented to reduce COVID-19 related health risks for everyone engaged in the educational process. Masks or face coverings must be worn over the nose and mouth, in accordance with the Centers for Disease Control and Prevention (CDC).

COVID-19 SIGNS AND SYMPTOMS

We encourage individuals to monitor for the signs and symptoms of COVID-19 prior to coming on campus.

If you have experienced the symptoms listed below or have a body temperature 100.4°F or higher, we encourage you to self-quarantine at home and contact a primary care physician's office, local urgent care facility, or health department for further direction. Please notify your instructor(s) by email and do not come on campus for any reason.

COVID-19 Key Symptoms
Fever or felt feverish
Chills

COVID-19 Key Symptoms
Shortness of breath or difficulty breathing (not attributed to any other health condition)
Fatigue
Muscle or body aches
Headache
New loss of taste or smell
Sore throat (not attributed to any other health condition)
Congestion or runny nose (not attributed to any other health condition)
Nausea or vomiting
Diarrhea
In the past 14 days, if you:
Have had close contact with or are caring for an individual diagnosed with COVID-19 at home (not in healthcare setting), please do not come on campus and contact your instructor (s).

COVID-19 SELF-REPORTING REQUIREMENT

Students, regardless of vaccination status, who test positive for COVID-19 or who have been exposed to a COVID-19 positive person, are required to self-report <https://www.southeasterntech.edu/covid-19/>. Report all positive cases of COVID-19 to your instructor and [Stephannie Waters](mailto:swaters@southeasterntech.edu), Exposure Control Coordinator, swaters@southeasterntech.edu, 912-538-3195.

ATTENDANCE GUIDELINES

Class attendance is a very important aspect of a student's success. Being absent from class prevents students from receiving the full benefit of a course and also interrupts the learning process. Southeastern Technical College considers both tardiness and leaving early as types of absenteeism. Responsibility for class attendance rests with the student. Regular and punctual attendance at all scheduled classes is required for student success. Students will be expected to complete all work required by the instructor as described in the individual course syllabus.

Instructors have the right to give unannounced quizzes/assignments. Students who miss an unannounced quiz or assignment will receive a grade of 0. Students who stop attending class, but do not formally withdraw, may receive a grade of "F" (Failing 0-59) and face financial aid repercussions in upcoming semesters.

Instructors are responsible for determining whether missed work may be made up and the content and dates for makeup work is at the discretion of the instructor.

Students will not be withdrawn by an instructor for attendance; however, all instructors will keep records of graded assignments and student participation in course activities. The completion dates of these activities will be used to determine a student's last date of attendance in the event a student withdraws, stops attending, or receives an "F" in a course.

STUDENTS WITH DISABILITIES

Students with disabilities who believe that they may need accommodations in this class based on the impact of a disability are encouraged to contact the appropriate campus coordinator to request services.

Swainsboro Campus: [Daphne Scott \(dscott@southeasterntech.edu\)](mailto:dscott@southeasterntech.edu) 478-289-2274, Building 1, Room 1210.
 Vidalia Campus: [Helen Thomas \(hthomas@southeasterntech.edu\)](mailto:hthomas@southeasterntech.edu), 912-538-3126, Building A, Room 165.

SPECIFIC ABSENCES

Provisions for Instructional Time missed because of documented absences due to jury duty, military duty, court duty, or required job training will be made at the discretion of the instructor.

PREGNANCY

Southeastern Technical College does not discriminate on the basis of pregnancy. However, we can offer accommodations to students who are pregnant that need special consideration to successfully complete the course. If you think you will need accommodations due to pregnancy, please make arrangements with the appropriate campus coordinator.

Swainsboro Campus: [Daphne Scott \(dscott@southeasterntech.edu\)](mailto:dscott@southeasterntech.edu) 478-289-2274, Building 1, Room 1210.

Vidalia Campus: [Helen Thomas \(hthomas@southeasterntech.edu\)](mailto:hthomas@southeasterntech.edu), 912-538-3126, Building A, Room 165.

It is strongly encouraged that requests for consideration be made **PRIOR** to delivery and early enough in the pregnancy to ensure that all the required documentation is secured before the absence occurs. Requests made after delivery **MAY NOT** be accommodated. The coordinator will contact your instructor to discuss accommodations when all required documentation has been received. The instructor will then discuss a plan with you to make up missed assignments.

WITHDRAWAL PROCEDURE

Students wishing to officially withdraw from a course(s) or all courses after the drop/add period and prior to the 65% point of the term in which student is enrolled (date will be posted on the school calendar) must speak with a Career Counselor in Student Affairs and complete a Student Withdrawal Form. A grade of "W" (Withdrawn) is assigned for the course(s) when the student completes the withdrawal form.

Students who are dropped from courses due to attendance after drop/add until the 65% point of the semester will receive a "W" for the course.

Important – Student-initiated withdrawals are not allowed after the 65% point. Only instructors can drop students after the 65% point for violating the attendance procedure of the course. Students who are dropped from courses due to attendance after the 65% point will receive either a "WP" (Withdrawn Passing) or "WF" (Withdrawn Failing) for the semester.

Informing your instructor that you will not return to his/her course, does not satisfy the approved withdrawal procedure outlined above.

There is no refund for partial reduction of hours. Withdrawals may affect students' eligibility for financial aid for the current semester and in the future, so a student must also speak with a representative of the Financial Aid Office to determine any financial penalties that may be assessed due to the withdrawal. A grade of "W" will count in attempted hour calculations for the purpose of Financial Aid.

MAKEUP GUIDELINES (TESTS, QUIZZES, HOMEWORK, PROJECTS, ETC.)

Please refer to the above section: Student Requirements

ACADEMIC DISHONESTY POLICY

The Southeastern Technical College Academic Dishonesty Policy states that all forms of academic dishonesty, including but not limited to cheating on tests, plagiarism, collusion, and falsification of information, will call for discipline. The policy can also be found in the Southeastern Technical College Catalog and Handbook.

PROCEDURE FOR ACADEMIC MISCONDUCT

The procedure for dealing with academic misconduct and dishonesty is as follows:

1. First Offense

Student will be assigned a grade of "0" for the test or assignment. Instructor keeps a record in

course/program files and notes as first offense. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus. The Registrar will input the incident into Banner for tracking purposes.

2. Second Offense

Student is given a grade of "WF" (Withdrawn Failing) for the course in which offense occurs. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus indicating a "WF" has been issued as a result of second offense. The Registrar will input the incident into Banner for tracking purposes.

3. Third Offense

Student is given a grade of "WF" for the course in which the offense occurs. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus indicating a "WF" has been issued as a result of third offense. The Vice President for Student Affairs, or designee, will notify the student of suspension from college for a specified period of time. The Registrar will input the incident into Banner for tracking purposes.

STATEMENT OF NON-DISCRIMINATION

The Technical College System of Georgia (TCSG) and its constituent Technical Colleges do not discriminate on the basis of race, color, creed, national or ethnic origin, gender, religion, disability, age, political affiliation or belief, genetic information, disabled veteran, veteran of the Vietnam Era, spouse of military member, or citizenship status (except in those special circumstances permitted or mandated by law). This nondiscrimination policy encompasses the operation of all technical college-administered programs, federally financed programs, educational programs and activities involving admissions, scholarships and loans, student life, and athletics. It also applies to the recruitment and employment of personnel and contracting for goods and services.

All work and campus environments shall be free from unlawful forms of discrimination, harassment and retaliation as outlined under Title IX of the Educational Amendments of 1972, Title VI and Title VII of the Civil Rights Act of 1964, as amended, the Age Discrimination in Employment Act of 1967, as amended, Executive Order 11246, as amended, the Vietnam Era Veterans Readjustment Act of 1974, as amended, Section 504 of the Rehabilitation Act of 1973, as amended, the Americans With Disabilities Act of 1990, as amended, the Equal Pay Act, Lilly Ledbetter Fair Pay Act of 2009, the Georgia Fair Employment Act of 1978, as amended, the Immigration Reform and Control Act of 1986, the Genetic Information Nondiscrimination Act of 2008, the Workforce Investment Act of 1998 and other related mandates under TCSG Policy, federal or state statutes.

The Technical College System and Technical Colleges shall promote the realization of equal opportunity through a positive continuing program of specific practices designed to ensure the full realization of equal opportunity.

The following individuals have been designated to handle inquiries regarding the nondiscrimination policies:

<p>American With Disabilities Act (ADA)/Section 504 - Equity- Title IX (Students) – Office of Civil Rights (OCR) Compliance Officer</p>	<p>Title VI - Title IX (Employees) – Equal Employment Opportunity Commission (EEOC) Officer</p>
<p>Helen Thomas, Special Needs Specialist Vidalia Campus 3001 East 1st Street, Vidalia Office 165 Phone: 912-538-3126 Email: Helen Thomas hthomas@southeasterntech.edu</p>	<p>Lanie Jonas, Director of Human Resources Vidalia Campus 3001 East 1st Street, Vidalia Office 138B Phone: 912-538-3230 Email: Lanie Jonas ljonas@southeasterntech.edu</p>

ACCESSIBILITY STATEMENT

Southeastern Technical College is committed to making course content accessible to individuals to comply with the requirements of Section 508 of the Rehabilitation Act of Americans with Disabilities Act (ADA). If you find a problem that prevents access, please contact the course instructor.

GRIEVANCE PROCEDURES

Grievance procedures can be found in the Catalog and Handbook located on Southeastern Technical College's website.

ACCESS TO TECHNOLOGY

Students can now access Blackboard, Remote Lab Access, Student Email, Library Databases (Galileo), and BannerWeb via the mySTC portal or by clicking the Current Students link on the [Southeastern Technical College \(STC\) Website \(www.southeasterntech.edu\)](http://www.southeasterntech.edu).

TECHNICAL COLLEGE SYSTEM OF GEORGIA (TCSG) GUARANTEE/WARRANTY STATEMENT

The Technical College System of Georgia guarantees employers that graduates of State Technical Colleges shall possess skills and knowledge as prescribed by State Curriculum Standards. Should any graduate employee within two years of graduation be deemed lacking in said skills, that student shall be retrained in any State Technical College at no charge for instructional costs to either the student or the employer.

GRADING POLICY

Assessment/Assignment	Percentage
Homework	30%
Quizzes	40%
Midterm	15%
Final	15%
Assessment/Assignment	Percentage

GRADING SCALE

Letter Grade	Range
A	90-100
B	80-89
C	70-79
D	60-69
F	0-59

Course Number and Name

Fall Semester 202212 Lesson Plan

*HW: Homework

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
01/10	Chapters 1 & 2	Review syllabus Review blackboard login & assignments to be completed Chapters 1 & 2	HW #1: Chap1 Due 1/14 HW # 2: Chap 2 Due 1/21 Quiz #1: 01/24	1 a, b, c
01/24	Chapter 3	Classification of matter States and properties of matter Temperature Energy Specific heat	HW #2 Due 01/28 Quiz #2: 01/31 E-Ticket #1: 01/31	2 a, b, c
01/31	Chapter 4	Elements and symbols Periodic table The atom Isotopes Electron energy levels Electron configurations	HW #3 Due 02/04 Quiz #3: 02/07 E- Ticket #2: 02/07 Chapter 4 virtual Study session: 02/08 at 1:30pm	2 & 3 a, b, c
02/07	Chapter 5	Natural Radioactivity Nuclear Reactions Half-life of a Radioisotope Nuclear Fission and Fusion	HW #4 Due 02/11 Quiz #4: 02/14 E- Ticket #3 02/14	3 a, b, c
02/14	Chapter 6	Ionic Bonding/Compounds Molecular Shapes and Intermolecular Forces Covalent bonding/Molecules	HW #5 Due 02/25 E- Ticket #4: 02/21 Mid-Term Review 02/28	3 a, b, c
03/07	Mid-term Exam	Mid-term Exam	Mid-term Exam	Mid-term Exam
03/14	Chapter 7	Equations for Chemical Reactions Types of Chemical Reactions Oxidation-Reduction Reactions Mole Relationships in Chemical Equations	HW#6 Due 03/18 Quiz #5: 03/21 Chapter 7 virtual Study session 03/15 at 1:30pm	4 a, b, c
03/21	Chapter 8	Properties of gases Boyle's Law Charles' Law Gay-Lussac's Law Combined Gas Law Avogadro's Law Ideal Gas Law Dalton's Law	HW#7 Due 03/25 Quiz #6: 03/28	5 a, b, c

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
03/28	Chapter 9	Solutions Electrolytes and nonelectrolytes Solubility Solution concentrations and reactions Dilution of solutions Properties of solutions	HW #8 Due 04/1 Quiz #7: 04/11	6 a, b, c
04/11	Chapter 10	Rate of reactions Chemical equilibrium Equilibrium constants Using equilibrium constants Le Chatelier's Principle	HW #9 Due 04/15 Quiz #8: 04/18	8 a, b, c
04/18	Chapter 11	Acids and Bases Bronsted-Lowry acids and bases Strengths of acids and bases Dissociation of weak acids and bases Dissociation of water pH scale Reactions of acids and bases Buffers	HW #10 Due 04/22 Quiz #9 04/25	7 a, b, c
04/25	Review for Final Exam	Chapters 1-11		1-8 a, b, c
05/2	Final	Final	Final	Final

COMPETENCY AREAS: (WILL VARY FOR EACH COURSE/TAKEN FROM STATE STANDARDS)

Order	Competency Area: 1 Description: Measurement and Units
1	Convert among metric, English, and S.I. units using dimensional analysis (unit-factor analysis).
2	Be able to use scientific notation.
3	Measure and solve problems of density and specific gravity.
4	Measure temperature, understand and convert between Fahrenheit, Celsius, and Kelvin scales.

Order	Competency Area: 2 Description: Structure of Matter
1	Identify the three subatomic particles, their properties, and relationships.
2	Determine and explain significance of atomic number and mass number.
3	Describe atomic structure relating to energy level, sublevels, orbitals, and electrons.
4	Relate atomic structure to the arrangement of the periodic table.
5	Compare the composition of elements, compounds, and mixtures.
6	Describe the physical basis of the solid, liquid, and gaseous states of matter.
7	Determine melting point and boiling point. Describe the energy considerations of phase

Order	Competency Area: 3 Description: Chemical Bonding
1	Describe ionic, polar, and non-polar covalent bonds. Describe van der Waals interactions.
2	Describe the formation of stable (unstable) ions.
3	Determine electron-dot structure for atoms, ions, radicals, and covalent compounds.
4	Name ionic and covalent compounds using IUPAC inorganic nomenclature.
5	Calculate ionic charges from a chemical formula. Define basic rules of oxidation numbers.
6	Calculate the molecular weight of a compound from chemical formula.
7	Determine the empirical formula from percent composition data.
4	Measure temperature, understand and convert between Fahrenheit, Celsius, and Kelvin scales.

Order	Competency Area: 4 Description: Reactions
1	Identify the basic types of chemical reactions.
2	Describe oxidation and reduction. Identify oxidizing and reducing agents.
3	Describe reactions with balanced equations.
4	Describe Avogadro's number as it relates to the mole concept.
5	Use stoichiometry to balance molar relationships and masses of species in a chemical reaction.
6	Describe reaction theory and collision theory. Explain activation energy and catalysis.
7	Identify factors that affect an equilibrium reaction.
8	Interpret the meaning of equilibrium constant.
9	Calculate the equilibrium constant for a given reaction.
10	Explain Le Chatelier's Principle.
11	Define reaction kinetics and the meaning of forward and reverse rates. Describe factors which affect the rate of reaction.

Order	Competency Area: 5 Description: Gas Laws
1	Describe the kinetic molecular theory as it relates to the properties of gases.
2	Interpret and compare Boyle's Law, Charles' Law, and Gay Lusaac's Law.
3	Interpret Dalton's Law and Graham's Law.
4	Demonstrate calculations using the combined gas law and ideal gas law.

Order	Competency Area: 6 Description: Liquid Mixtures
1	Describe properties of a solution.
2	Describe methods of expressing concentration, including percent w/w, percent w/v, and molarity.
3	Solve problems calculating concentrations and converting concentrations to different units.
4	Identify properties of a suspension.
5	Identify properties of a colloidal dispersion.
6	Describe the properties and physical constraints of water.

Order	Competency Area: 7 Description: Acids and Bases
1	Identify the properties, uses, and reactions of acids and bases.
2	Describe ionization as it relates to acid or base strength.

Order	Competency Area: 7 Description: Acids and Bases
3	Briefly describe the Arrhenius and Bronsted-Lowry models of acids and bases.
4	Explain pH scale. Calculate pH from $[H_3O^+]$ or $[OH^-]$.

Order	Competency Area: 8 Description: Salts and Buffers
1	Describe the formation of salts in a neutralization reaction.
2	Explain how buffers maintain pH. Relate this to Le Chatelier's Principle.

GENERAL CORE EDUCATIONAL COMPETENCIES:

- a) The ability to utilize standard written English.
- b) The ability to solve practical mathematical problems.
- c) The ability to read, analyze, and interpret information.