



TENTATIVE—SUBJECT TO CHANGE

**CHEM 1151 – Survey of Inorganic Chemistry
COURSE SYLLABUS
Spring Semester 2021-202114**

COURSE INFORMATION

Credit Hours/Minutes: 3/2250
Campus/Class Location: Vidalia
Class Meets: In person for 15 weeks
Course Reference Number (CRN): 40200

INSTRUCTOR CONTACT INFORMATION

Instructor Name: Professor Shirley Holman
Office Location: no office on campus
Office Hours: By Appointment
Email Address: sholman@southeasterntech.edu
Tutoring Hours: Tuesdays 1:30pm-3:30pm

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](http://www.southeasterntech.edu/student-affairs/catalog-handbook.php) (<http://www.southeasterntech.edu/student-affairs/catalog-handbook.php>).

REQUIRED TEXT

Mastering Chemistry with Pearson eText – Instant Access – for General, Organic, and Biological Chemistry: Structures of Life, 6th Edition, Timberlake 2016; Electronic Package: 9780134813035.

Pearson Course ID: holman39718

REQUIRED SUPPLIES & SOFTWARE

Notebook
Writing utensil
Scientific Calculator
PC, Laptop, or tablet
eText

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

COURSE DESCRIPTION

This course is an introduction to 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

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 may still access the assignments for

review and practice following the due date, but no further credit will be awarded. **The course ID is holman39718.**

TEST/QUIZZES

All test and quizzes will be administered in person.

COVID-19 MASK REQUIREMENT

Masks or face coverings must be worn at all times while on the campus of Southeastern Technical College. 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). A student's refusal to wear a mask or face covering will be considered a classroom disruption and the student may be asked to leave campus and/or receive further discipline.

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
Cough: new or worsening, not attributed to another health condition
Shortness of breath, not attributed to another health condition
New loss of taste or smell
Chills; Repeated shaking with chills
Sore throat, not attributed to another health condition
Muscle pain, not attributed to another health condition or exercise
Headache, not attributed to another health condition
Diarrhea (unless due to known cause)
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, who test positive for COVID-19 or who have been exposed to a COVID-19 positive person, are required to self-report using the [COVID 19 Health Reporting Form](#). Report all positive cases of COVID-19 to your instructor and [Stephannie Waters](#), 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 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.

Attendance is counted from the first scheduled class meeting of each semester. To receive credit for a course a student must attend at least 90% of the scheduled instructional time. All work missed due to tardiness or absences must be made up at the convenience of the instructor. Any student attending less than the required scheduled instructional time (90%) may be dropped from the course as stated below in the Withdrawal Procedure.

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: [Macy Gay \(mgay@southeasterntech.edu\)](mailto:mgay@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: [Macy Gay \(mgay@southeasterntech.edu\)](mailto:mgay@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. Important – Student-initiated withdrawals are not allowed after the 65% point. After the 65% point of the term in which the student is enrolled, the student has earned the right to a letter grade and will receive a grade for the course. Please note: Abandoning a course(s) instead of following official withdrawal procedures may result in a grade of "F" (Failing 0-59) being assigned. 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.)

No late homework assignments will be accepted. Students with excused absences that need to makeup quizzes/tests can do so on Tuesday after the missed formal assessment by appointment only. Any missed quizzes or test will be graded as a 0.

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:

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

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	20%
Quizzes	30%

Assessment/Assignment	Percentage
Midterm	30%
Final Exam	20%

GRADING SCALE

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

Course Number and Name

Spring Semester 2021 Lesson Plan

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
1/11	Review syllabus Review blackboard login & assignments to be completed Chapters 1 & 2	Syllabus Blackboard orientation Blackboard orientation quiz Pledge acknowledgment quiz COVID acknowledgement Scientific Method Scientific Notation Converting Units/ Conversion Factors Significant Figures Solving Equations Percentages and Graphs	1/11 blackboard orientation, pledge, COVID acknowledgment 1/15 Chap 1 HW due 1/22 Chap 2 HW due 1/25 Quiz 1	1
1/25	Chapter 3	Classification of matter States and properties of matter Temperature Energy Specific heat	1/29 Chap 3 HW due 2/1 Quiz 2	2
2/3	Chapter 4	Elements and symbols Periodic table The atom Isotopes Electron energy levels Electron configurations	2/9 Chap 4 HW due 2/10 Quiz 3	3
2/15	Chapter 5	Natural Radioactivity Nuclear Reactions Half-life of a Radioisotope Nuclear Fission and Fusion	2/19 Chap 5 HW due 2/22 Quiz 4	4
2/24	Chapter 6	Ionic Bonding/Compounds Molecular Shapes and Intermolecular Forces Covalent bonding/Molecules	3/2 Chap 6 HW due	
3/3	Mid Term	Mid Term	Mid Term	Mid Term

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
3/8	Chapter 7	Equations for Chemical Reactions Types of Chemical Reactions Oxidation-Reduction Reactions Mole Relationships in Chemical Equations *Stoichiometry	3/16 Chap 7 HW due 3/17 Quiz 5	
3/22	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	3/29 Chap 8 HW due 3/31 Quiz 6	
4/5	Spring Break	Spring Break	Spring Break	Spring Break
4/7	Chapter 9	Solutions Electrolytes and nonelectrolytes Solubility Solution concentrations and reactions Dilution of solutions Properties of solutions	4/12 Chap 9 HW due 4/14 Quiz 7	6
4/19	Chapter 10	Rate of reactions Chemical equilibrium Equilibrium constants Using equilibrium constants Le Chatelier's Principle	4/20 Chap 10 HW due 4/21 Quiz 8	
4/26	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	4/30 Chap 11 HW due	4, 7, 8
5/3	Final Exam	Final Exam	Final Exam	Final Exam

***Schedule may be modified at the instructor's discretion.

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.
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:

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