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## Course Information

**Course Title:** Introduction to Chemistry I

**Course Prefix, Number & Section:** CHE.101.100 or CHE 101.108

**Credits:** 5

**Course Description:** This course is the first in a series of two courses designed for students with no previous chemistry background. For non-science majors and/or students pursuing programs in the occupational and health related career areas. This course includes the study of measurements, atomic theory, chemical bonding, nomenclature, stoichiometry, solutions, acid and base chemistry, gas laws, and condensed states of matter and nuclear chemistry. Laboratory experiments demonstrate the above concepts qualitatively and quantitatively.

**Prerequisite(s)/Co-requisites:** Pre-requisite: none Co-requisite: MAT050

**Semester and Year:** Fall, 2017

**Meeting Location, Times, and Days:** Section  
101: Lecture - MWF in WRECT 106 from 7:45-9:00 am, and Lab – TR in WRECT 110 from 12:45-2:30 am

Section 108: Lecture - MWF in WRECT 106 from 7:45-9:00 am and Lab – TR in WRECT 110 from 10:45-12:25 TR

**Start Date:** August 21, 2017

**End Date:** December 13, 2017

**Last date to drop with a refund:** September 7, 2017

**Last date to withdraw:** November 13, 2017

**Date and Time of Final Exam:**

Section 100 - Part 1 - December 11, 2017 7:45-9:45 am, Part 2 – December 12, 2017 1:00-3:00 pm

Section 108 - Part 1 - December 11, 2017 7:45-9:45 am, Part 2 – December 12, 2017 1:00-3:00 pm

## Instructor Information

**Name:** Jay McLaughlin

**Phone:** 970-675-3254

**E-mail:** jay.mclaughlin@cncc.edu

**Office Location:** WRECT 119

**Office Hours:** M-R 10:45 am -12:00 pm

## Course Information

The instructor reserves the right to make changes to the course and course policies. Any changes will be noted in the addendum.

## Required Course Materials

Textbook: Introduction to General, Organic, and Biochemistry - 10<sup>th</sup> ed. Hein, et al. ISBN-10: 0-470-59880-8, ISBN-13: 978-0-470-59880-1

Lab Book: Chemistry 101 Lab Book (available in the book store only)

Scientific Calculator

Access to [www.chemhaven.org/che101](http://www.chemhaven.org/che101)

## Course Competencies

1. Use correct number of significant figures in calculations
2. Organize mathematically using dimensional analysis in a conversion from one unit to another
3. Use the periodic table to assist in explaining chemical bonding, polarity, and physical and chemical properties of elements
4. Given the name or the formula of a compound, write and/or give orally the correct corresponding formula or name
5. After graphing experimental data, determine the mathematical relationship between y and x
6. Connect real world applications to chemical principles learned
7. Use the scientific notation, log, antilog, and exponent keys on a calculator when required for various chemical calculations
8. Read, analyze and apply written material to new situations
9. Write and speak clearly and logically in presentations and essays
10. Demonstrate the ability to select and apply contemporary forms of technology to solve problems or compile information

## Outline View

Common Course Topical Outline	CHE 101 - CNCC	Common Course Topical Outline	CHE 101 - CNCC
I. Introduction		VI. States of Matter	
A. Terminology	Ch. 1	A. Gas State	Ch. 12
B. Classification of Matter	Ch. 1	1. Pressure	Ch. 12
C. Physical and Chemical Changes of Matters	Ch. 4	2. Gas Laws (Boyles', Charles', Ideal Gas, Dalton's)	Ch. 12
D. Measurement including Significant Figures	Ch. 2	3. Stoichiometry	Ch. 12
E. Introduction to Dimensional Analysis	Ch. 2	B. Condensed States	
II. Atomic Theories and Periodic Table	Ch. 3, 5	1. Liquid State	Ch. 13
A. Atomic Theories and Structure of the Atom	Ch. 10	2. Solid State	Ch. 13,14
B. Relative mass and the mole	Ch. 5	3. Intermolecular Forces	Ch. 11, 13, 14
C. Electronic Configuration and the Periodic Table	Ch. 10,11	C. Changes in States of Matter	Ch. 13
1. Electron Configuration	Ch. 10, 11	VII. Solutions	
2. Orbital Notation	Ch. 10, 11	A. Terminology	Ch. 14
3. Classification of the elements	Ch. 3, 5, 10, 11	B. Concentration Units and Preparation	Ch. 9,13
4. Property Trends	Ch. 11	C. Colligative Properties	Ch. 14
III. Chemical Bonding and Molecules		VIII. Reaction Rates and Equilibrium	
A. Types of Chemical Bonding	Ch. 3, 5, 11	A. Rates and Rate Law	Ch. 14
B. Noble Gas Configuration and Chemical Bonding	Ch. 11	B. Factors that Influence Rate	Ch. 14
1. Ionic	Ch. 3, 5, 6, 11	C. Chemical Equilibrium and the Equilibrium Expression	Ch. 16
2. Covalent	Ch. 3, 5, 6, 11	D. LeChatlier's Principle	Ch. 16
3. Polar Covalent	Ch. 11	IX. Acid/Base Chemistry	
C. Lewis Dot Configuration	Ch. 11 Lab 11	A. Acid/Base Theories	Ch. 15
D. Polyatomic Ions	Ch. 3, 6, 11	B. Nomenclature	Ch. 15
E. Valence Shell Electron Pair Repulsion Theory (VSEPR)	Ch. 11 Lab 11	C. pH	Ch. 15
F. Polarity	Ch. 11 Lab 11	D. Strengths of Acids and Bases	Ch. 15
IV. Nomenclature and Formulas of Compounds		E. Titration and Stoichiometry	Ch. 9, 15 Lab 5
A. Oxidation Number	Ch. 11	F. Buffers	Ch. 16
B. Ionic Compounds	Ch. 6	X Nuclear Chemistry	
C. Covalent Compounds	Ch. 6	A. Radioactivity	Ch. 18
V. Chemical Reactions		B. Nuclear Equations	Ch. 18
A. Chemical Equations and Terminology	Ch. 8	C. Measurement	Ch. 18
B. Types of Chemical Reactions	Ch. 8 Lab 6, 7	D. Half-Life	Ch. 18
C. Energy and Reactions	Ch. 4, 8		
D. Stoichiometry	Ch. 9		
1. Limiting Reagent	Ch. 9		
2. Percent Yield	Ch. 9		

## Course Policies and Procedures

### Expectations for satisfactory student performance

- Students are expected to be on time and attend all classes and laboratory sessions.
- Students are expected to read related text, and other assigned reading, prior to the class session in which it will be discussed.
- Students are expected to read laboratory exercises and be prepared to begin laboratory procedures upon entering the lab session.
- Students are expected to spend approximately 2 hours, for every hour spent in class, reviewing, reading, answering all chapter questions, and studying. This serves to keep the student up to date with the material and does not include time needed to “cram” for exams.

### Attendance

- Attendance is required for performance in this course. Missing class for any reason is detrimental to a student’s grade. Because of this, every three unexcused absences will result in a 5% decrease in the overall grade. Excused absences include athletic events, field trips, illness with doctors note (if you are not sick enough to go to the doctor, you are not sick enough to be excused from class), and family emergency (death etc.). To be excused the student must ensure the instructor is notified in writing and in advance.
- Laboratory exercises are essential “hands-on” experiences and cannot be made up. Absence from 3 or more laboratory sessions will result in a grade of **F** in the lab, and will result in failure of the class.

### Course content and assessment

- Class will consist of lecture, demonstrations, movies, student presentations, and discussions. Although the text is generally followed, the student is responsible for all material covered in class and any related or assigned reading.

### Homework

- Homework assignments will be given for each chapter. The assignments will be handed out in class and posted on the website.
- At the discretion of the instructor homework may be turned in one class day late for full credit. (For example if the assignment is due Mon, then you may turn it in any time up until Tue at 8:00 am for full credit) After that time, the assignment will be worth **ZERO** points, however, on request it will be graded so that you may see if you did the problems correctly.
- Not showing up, oversleeping, excused absences etc. does not negate the due date/time.

### Laboratory

- Laboratory sessions will each consist of brief lecture, activities, and review questions. Students are graded on their preparation, performance, and participation.
- Lab assignments are due one lab session after the lab is finished.
- Labs handed in late will receive a 20% late penalty per day.
- Labs turned in after the graded lab is returned are worth **ZERO** points.

### Exams

- Exam dates will be determined at least 1 week in advance.
- Missed tests can be made up for full credit only for excused absences and when the instructor is notified in advance and in writing. Missed exams must be made up the first day the student returns to class.
- Without prior arrangements, 25% will be deducted off your test grade per day late.
- Save your tests! There will be a two-part final exam, which will count as two tests. The chapter tests will help you prepare for your final.

### Evaluation/Grading Criteria

- One final grade is given for the combined performance in class and laboratory. Your grade will be calculated as either:

60% Exams, 20% Homework, 20% Lab or

80% Exams, 20% Lab

-The grade given will be the better of the two grades determined above.

-Current Grade can be accessed at <https://cncc.desire2learn.com/> (D2L)

-Grades are based on the standard scale:

Percent	Grade
90%	A
80%	B
70%	C
60%	D
59% or less	F

### Cheating

Students are expected to conduct themselves in an honest, scholarly manner in accordance with college policies. Turning in work that is not 100% original and belonging to the student will result in a ZERO (F) for that assignment. Furthermore, the student will be reported to the Dean of Instruction for further disciplinary sanctions in accordance with CNCC policies. Providing materials that are used for copying is considered cheating and will be treated as above.

### Cell Phone Policy

Student cell phones must be turned off while in the class. A ringing, vibrating or otherwise distracting cell phone not only distracts the owner but others around as well. The penalty for a phone ringing, answering, or any other use is a zero on that day's homework, lab or exam.

### Topical Outline/Calendar/Schedule

Chapter	Chapter Name	Exams
2	Standards and Measurements	Exam 1
5	Early Atomic Theory and Structure	Exam 2
1	Intro. to Chemistry	
3	Elements and Compounds	
4	Properties of Matter	Exam 3
6	Nomenclature of Inorganic Compounds	
7	Quantitative Composition of Compounds	Exam 4
8	Chemical Equations	
9	Calculations from Chemical Equations	
10	Modern Atomic Theory and the Periodic Table	Exam 5
11	Chemical Bonds: Formation of Compounds	
12	The Gaseous State of Matter	Exam 6
13	Properties of Liquids	
14	Solutions	Exam 7
15	Acids, Bases, and Salts	
16	Chemical Equilibrium	

## Standard College Policies

### Attendance Policy

Students should explain the reasons for absence to their instructors. The student is responsible for making up work missed due to any absence, including those involving College-sponsored athletic, academic, or recreational trips. **Students will not be penalized for absences due to College-sponsored activities; however, instructors reserve the right to assign relevant, alternative work for missed class time due to such an activity.** Absences for extenuating circumstances or activities outside of a College-sponsored activity may be excused by the Dean of Instruction or the Vice-President of Instruction and Student Affairs with notification to the faculty.

### Academic Integrity Policy

Colorado Northwestern Community College considers academic dishonesty, which includes cheating and plagiarism, to be an extremely serious offense, and will be dealt with by appropriate disciplinary action up to and including suspension. The word “cheating” refers to the acts of giving, utilizing, or receiving un-permitted aid during examinations or in the preparation of reports or any other class work that the instructor will use as a basis for evaluation. The word “plagiarism” refers to the use of another person’s work without giving proper credit to that person. When paraphrasing another person’s work (i.e., borrowing but rewording that person’s facts, opinions, or ideas), a student must give proper credit through the use of appropriate documentation. When copying verbatim another person’s work (i.e., words, phrases, sentences, or entire passages), a student must credit that person through the use of quotation marks and appropriate documentation.

### Anti-Discrimination Policy

Colorado Northwestern Community College prohibits all forms of discrimination and harassment including those that violate federal and state law, or the State Board for Community Colleges and Occupational Education Board Policies 3-120 and 4-120. The College does not discriminate on the basis of sex/gender, race, color, age, creed, national or ethnic origin, physical or mental disability, veteran status, pregnancy status, religion, genetic information, gender identity, or sexual orientation in its employment practices or educational programs and activities. Colorado Northwestern Community College will take appropriate steps to ensure that the lack of English language skills will not be a barrier to admission and participation in vocational education programs.

### Americans with Disabilities Act

Any student, who believes he/she has a disability, as outlined in the Americans with Disabilities Act, and would like reasonable accommodations, should set up an appointment to discuss this with the ADA Coordinator on his/her respective campus. Faculty is not allowed to provide accommodations without proper notification from the ADA Coordinator.

### Early Alert

All instructors participate in CNCC’s Early Alert system. Every three weeks, your grades will be submitted to members of the Student Success Team. In addition, your instructor may speak to you directly about his/her concerns regarding a number of possible issues, including absence, late or missing submissions, poor or high performance on assessments, etc. The electronic Early

Alert system is designed to supplement this communication and allow instructors to request additional early intervention for students from a CNCC advisor or specialist. The hope is to provide you the support you need to be successful and to share information about additional learning opportunities the college offers. Alerts can be sent throughout the semester, can be in response to positive or negative performance, and are designed to link you with support opportunities here at CNCC, such as tutoring services, honors programs, financial aid resources, etc. If you are contacted by a CNCC advisor, please speak with him/her and your instructor to find out more about the nature of the alert and the supports and services your instructor has recommended.

### **Statement Regarding Mandatory Reporting**

Our College is committed to preserving a safe and welcoming educational environment for all students. As part of this effort, I have an obligation to report certain issues relating to the health and safety of campus community members. I must report to the appropriate College officials any allegation of discrimination or harassment. Sexual misconduct, which includes sexual harassment, non-consensual sexual contact, non-consensual sexual intercourse, and sexual exploitation, is considered a form of discrimination. In addition to reporting all discrimination and harassment claims, I must report all allegations of dating violence or domestic violence, child abuse or neglect, and/or credible threats of harm to yourself or others. Such reports may trigger contact from a College official who will want to talk with you about the incident that you have shared. In almost all cases, it will be your decision whether you wish to speak with that individual.

If you would like more information, you may reach the Title IX Coordinator: 970-824-1102 or the EO Coordinator at 970-675-3335.

Reports to law enforcement can be made at 970-675-8467 in Rangely or 970-824-1111 in Craig.

If you would like a confidential resource, in Rangely, please contact Counseling and Advocacy at 970-629-5729 or 670-629-0709. In Craig contact Advocates Crisis Support Services at 970-824-9709 or 970-827-2400.

Further information may be found on the College web site: [Sexual misconduct title ix](#)