North Central State College

MASTER SYLLABUS	2026-2027

A. Academic Division: Health Sciences

B. Discipline: Science

C. Course Number and Title: CHEM1030 Chemistry

D. Assistant Dean: Dr. Jason Tucker, Ph.D.

E. Credit Hours: 3
Lecture: 2 hours
Laboratory: 3 hours

F. Prerequisites: High school chemistry (minimum grade of C- required) or CHEM1010 (minimum grade of C- required) and completion of MATH0084 with minimum grade of C- qualifying math placement score

G. Last Course/Curriculum Revision Date: Fall 2023 Origin date: 10/20/2010

H. Textbook(s) Title:

Basics of General, Organic, and Biological Chemistry - OER Materials

- Author: David W. Ball, John W. Hill, and Rhonda J. Scott
- Copyright Year: 2011
- ISBN: 9781453311097
- OER link: https://chem.libretexts.org/Bookshelves/Introductory_Chemistry/Basics_of_General_Organic_and_Biological_Chemistry_(Ball_et_al.)

Our textbook is an open education resource (OER). This means that it is a free textbook which can be accessed in the link above. If you wish, a hard copy of the book can be purchased. Contact instructor for more information.

I. Workbook(s) and/or Lab Manual: None

J. Course Description: The course is to give the Allied Health and Nursing student an appreciation and understanding of general inorganic chemistry. Includes atomic and molecular structure, molecular forces, properties and states of matter, naming of chemical compounds, types and behaviors of solutions, types of reactions, acid base chemistry, carefully chosen organic topics with their applications to specific health problems. Laboratory exercises will enhance and reinforce lecture topics. (OTM for Natural Sciences TMNS)

K. College-Wide Learning Outcomes

College-Wide Learning Outcomes	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	

College-Wide Learning Outcomes	Assessments - - How it is met & When it is met
Information Literacy	
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Use and apply the units of the metric system, demonstrate the ability to develop the correct conversion factor to solve dimensional analysis problems	quizzes, laboratory exercises, worksheets, exam 1, final, met at end of semester
2. Predict the chemical behavior of the 1st 30 elements by their arrangement on the periodic table, Compare the characteristics of the subatomic particles making use of the periodic table	quizzes, laboratory exercises, worksheets, exam 1, final, met at end of semester
3. Given the various elements predict the way compounds will form and be able to write the name and write the formula Identify the forces involved in compound formation	quizzes, laboratory exercises, worksheets, exam 1, final, met at end of semester
4. Distinguish between the basic chemical reactions and demonstrate how to balance chemical reactions and determine stoichiometric ratios.	quizzes, laboratory exercises, worksheets, exam 1, final, met at end of semester
5. Be able to compare and contrast the differences between the states of matter how changes of state occur, and energy balances involved in these changes. Solve problems involving heat of fusion and heat of vaporization of water	quizzes, laboratory exercises, worksheets, exam 1, final, met at end of semester
6. Apply the Kinetic Molecular Theory of Gasses to analyze the behavior of gasses, explain the difference between directly and indirectly proportional gas property behaviors, choose the appropriate gas law to solve a problem	quizzes, laboratory exercises, worksheets, exam 1, final, met at end of semester
7. Describe the nature of aqueous solutions, how they are prepared, and their characteristics, predict their behavior upon erythrocytes	quizzes, laboratory exercises, worksheets, exam 2, final, met at end of semester
8. Categorize the properties of a solution and distinguish between various types of solutions demonstrate the ability to perform calculations involving concentrations	quizzes, laboratory exercises, worksheets, exam 2 , final met at end of semester
9. Be able to classify the differences between acids and bases, given the molarity of an acid or base calculate the pH, predict the results of an acid -base reaction, understand the bicarbonate blood buffering system, from given blood results be able the tell patient's acid- base status	quizzes, laboratory exercises, worksheets, final, met at end of semester

Outcomes	Assessments – How it is met & When it is met
10. Explain chirality ,D and L isomers and their effects on the behavior and of amino acids ,sugars, predict how cis and trans isomers affect fatty acid behavior, explain the effects of hydrogen bonding on DNA function, understand the structure of proteins, explain the similarities and differences between steroid hormones, identify the central functional area of a drug Introductory Naming of organic compounds	quizzes, laboratory exercises, worksheets, final, met at end of semester
11. Current issues in chemistry will be discussed.	Throughout the semester.
12. Have completed laboratory experiments that test basic chemistry principles adapted from corresponding lecture topics	laboratory exercises, exams, final, met at end of semester

M. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior
90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
83–86	B	3.00	Above Average
80–82	B-	2.67	Above Average
77–79	C+	2.33	Average
73–76	C	2.00	Average
70-72	C-	1.67	Average
67–69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Below Average
00--59	F	0.00	Failure

N. College Procedures/Policies:

North Central State College believes that every student is a valued and equal member of the community.* Every student brings different experiences to the College, and all are important in enriching academic life and developing greater understanding and appreciation of one another. Therefore, NC State College creates an inclusive culture in which students feel comfortable sharing their experiences. Discrimination and prejudice have no place on the campus, and the College takes any complaint in this regard seriously. Students encountering aspects of the instruction that result in barriers to their sense of being included and respected should contact the instructor, assistant dean, or dean without fear of reprisal.

* *Inclusive of race, color, religion, gender, gender identity or expression, national origin (ancestry), military status (past, present or future), disability, age (40 years or older), status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent, genetic information, or sexual orientation*

Important information regarding College Procedures and Policies can be found on the syllabus supplement located at
https://ncstatecollege.edu/documents/President/PoliciesProcedures/PolicyManual/Final%20PDFs/14-081b.pdf

North Central State College

SYLLABUS ADDENDUM

Academic Division:	Health Science	**Discipline:**	Chemistry
Course Coordinator:	Travis Green		
Course Number:	CHEM 1030-910	**Course Title:**	General, Organic, and Biological Chemistry
Semester / Session:	Fall 2026	**Start / End Date:**	08/17/2026 thru 12/11/2026

Instructor Information

Name:	Travis Green	**Credentials:**	PhD, Photochemical Sciences
Phone Number:	419-755-4556	**E-Mail Address:**	tgreen@ncstatecollege.edu
Office Location:	Health Science 322	**Office Hours:**	M- 1:00 - 4:00 PM, Tues 10:00 AM – 12:00 PM, Th 2:00 – 3:00 PM

I. Topical Timeline / Course Calendar (Subject to Change):

Week	Date	Lecture Topic	Lab Experiment	Closures
1	17-Aug	Chapter 1: Chemistry, Matter, and Measurement	Safety, Math Review	
2	24-Aug	Chapter 2: Elements, Atoms, and the Periodic Table	Introduction to Measurements	
3	31-Aug	Chapter 3: Ionic Bonding and Simple Ionic Compounds	Ion Conductivity	
4	7-Sep	Chapter 4: Covalent Bonding and Simple Molecular Compounds	Functional Groups (Mandatory)	*No Monday 9/7/26*
5	14-Sep	Chapter 5: Introduction to Chemical Reactions	*Exam 1*	
6	21-Sep	Chapter 6: Quantities in Chemical Reactions	Copper(II) Sulfate Synthesis	
7	28-Sep	Chapter 8: Solids, Liquids, and Gases	Gas Law Investigations	
8	5-Oct	Chapter 9: Solutions	Solutions and Dilutions (Mandatory)	
9	12-Oct	*No Lecture- Fall Break*	*No Lab- Fall Break*	*Fall Break*
10	19-Oct	Chapter 10: Acids and Bases	*No Lab-Travel*	
11	26-Oct	Chapter 7: Energy and Chemical Processes Chapter 11: Nuclear Chemistry	*Exam 2*	
12	2-Nov	Chapter 12: Organic Chemistry	IR Imaging	
13	9-Nov	Chapter 17: Lipids	*Exam 3*	*No Wednesday 11/11/26*
14	16-Nov	Chapter 16: Carbohydrates	Solubility (Mandatory)	
15	23-Nov	Chapter 18: Amino Acids, Proteins, and Enzymes	Banana Extraction (Mandatory)	*No Thursday 11/26*
16	30-Nov	Chapter 19: Nucleic Acids	*Lab Practical*	
17	7-Dec	*Final Exam Review*	*Final Exam*	

II. Grading and Testing Guidelines:

1. Final Grade Calculation

Activity	Qty	Points	Percentage
Homework (Homework, Plug It In Reflections, Writing Assignments)	15 Homework 15 PIN Reflections 3 Writing Assignments	30 10 25	10 %
Laboratory Exercises and Lab Handouts	10 Labs 1 Lab Practical 10 Active Learning	30 90 20	25 %
Concept Check Ins	15 Quizzes	10	10 %
Participation and Attendance	22 Sessions	5	5 %
Exams	3 Midterms	100	30 %
Final Exam	1 Final Exam	100	20 %

2. Course Assignments

a. Concept Check In Quizzes
   i. The concept check in quizzes (CCI's) are short 5-10 question assignments meant to test your understanding of the material after watching the micro-lecture videos. They should be completed by Wednesday of each week. The results of these CCI's will determine what we discuss during our live weekly zoom sessions.

b. Chapter Homework Assignments
   i. The chapter homework assignments will be 15-20 question assignments to give you a chance to practice the material. These will tend to be more difficult to the CCI's and will give you an idea of how questions on the exams will be formatted and what you will be expected to know. These will be due on Friday evenings by 11:59 PM each week.

c. Lab Experiments
   i. We will have weekly lab experiments designed to support our lecture topics. They will be due one week after the completion of lab. We will also have a lab practical at the end of the semester. On the lab practical you will be expected to replicate one of the procedures from earlier in the semester in a new context.

d. Active Learning Activities
   i. Each week we will be doing an activity that focuses on guided inquiry based learning. These activities will be during select laboratory activities and be done in groups to promote active learning. These will follow the Process Oriented Guided Inquiry Learning (POGIL) or Argument Driven Inquiry (ADI) methods.

e. Writing Assignments
   i. There will be three writing assignments throughout the semester designed to develop your written communication skills. Each will feature a writing prompt related to a lecture topic and you will apply the topic to your choice of subject. These will be due in week 4, week 11, and week 15 on Sunday evening by 11:59 PM.

f. Plug It In Reflections
   i. These are weekly reflection prompts for you to think about how this course connects to other areas of your life including: daily or common knowledge, other courses, future careers

g. Exams
   i. There will be 4 exams total. Three exams will be throughout the semester and cover around 4 chapters each. There will also be a cumulative final exam at the end of the semester. All exams take place during our normal lab time in person.

III. Examination Policy:

1. The reasons for which a student will be excused from taking an examination:
   a. Death in the immediate family (with documented verification)
   b. Personal illness or illness in immediate family (doctor's excuse required)
   c. Personal or Family Emergency (with documented verification)
   d. Mandated work (documentation required)
2. A student who misses an examination for any reason is responsible for:
   a. Contacting Dr. Green as soon as possible
      - This includes providing documentation
   b. Scheduling a make up if applicable as soon as possible
3. No makeup opportunity will be given for absences of unscheduled quizzes.

IV. Class Attendance and Homework Make-Up Policy:

1. **Class attendance is strongly encouraged** to acquire the knowledge required to be able to apply the concepts of chemistry in your chosen field
   a. **Lecture Attendance is optional but strongly encouraged.** Lecture recordings will be posted on Thursday evenings of each week for those that do not attend the live session.
   b. **Lab Attendance is required for the course.** Each student is given two free lab passes to miss labs. However there are 4 labs that are mandatory for attendance as they will appear on the lab practical. These labs are noted on the schedule.
2. **Late Assignment Policy**
   All assignments (except exams and presentations) can be turned up to one week after the due date. If the assignment is late it will be docked 30% automatically. NOTE: If an assignment is more than a few days late a 0 will be put in the gradebook with a note reminding you that it can be turned in for partial credit. This does not mean you cannot turn the assignment in this is just to make sure your grade is as up to date as possible.

   NOTE: Technical malfunctions will not be accepted as an automatic excuse for late work. Part of success online and as a professional is to be prepared

3. **Make-Up Assignments**
   a. Lecture Assignments:
      - With the flexible late policy there will be no makeup opportunities granted for class assignments unless documentation is provided that shows and explains why you were unable to complete the assignment within the one-week grace period.
   b. Lab Assignments:
      - Due to the dropping of one lab assignment at the end of the semester there will no makeup opportunities unless there is documentation showing evidence that you were unable to attend lab for more than two weeks.

4. **General Turn Around Time for Work Being Graded**
   a. In general, you can expect your graded work to be returned to you one week after it has been turned in. I will do my best to enter all grades into the canvas gradebook in a timely manner. If you see that I have not entered a grade into canvas and it has been turned in for 1 week feel free to email me about your grade.

V. Classroom Expectations:

1. Interactions with Dr. Green
   - I expect that you will come to Dr. Green with any questions, comments or concerns you may have!

2. Online Expectations
   a. I expect you to read through the weekly checklists and look ahead for due dates. This class moves at a fast pace and it is easy to get behind if you are not on top of everything. I expect you to watch all of the micro-lecture videos and complete the weekly quizzes on time. I also expect that you will attend our zoom sessions with your cameras on and that you will be focused and participate in lecture.

3. Email Policy
   a. You need to check your NCSC emails and Canvas Inbox announcements daily. Any emails to the instructor must be from your NCSC email account or from the student to the faculty using the canvas system. They must have a subject, be written in full sentences, and be signed with your name. Do not send an email written like a text message. Your email will be answered within 48 hours of a business day.

4. Student Misconduct
   a. Misconduct is disorderly or disruptive conduct that interferes with the normal operations of the College or infringes on the rights of others. You will be told to leave the classroom or lab if you violate this policy. See Student Handbook for more information.
   b. Academic Integrity is an important issue. Any student caught cheating or plagiarizing will receive a 0 on the assignment and will be reported to the your program director and the Dean of your division. This could result in failure of the assignment, failure of the class, dismissal from your program, and or dismissal from the college.
      - If you ever find yourself in a situation where you are considering academic dishonesty STOP and contact Dr. Green. I would much rather you turn in an assignment late instead of possibly being dismissed from the college.

VI. Important Dates and Information

1. Testing Accommodations
   a. Accommodations are available for students with learning disabilities or health conditions. If you think you may qualify or have qualified in the past for accommodations you need to reach out to Doug Heestand at NCSC's disability services office. Dr. Green can refer you if needed.
   b. You must initiate this process and send Dr. Green the form to sign so it can be taken care of ASAP. There is no retroactive accommodations for exams or assignments completed before the forms are signed.
2. Withdrawal and Drop Deadlines
   a. Last Day to Withdraw: September 22, 2026