CHEMISTRY 1410 (Formerly 111) Traditional

Introduction to Chemistry

Spring 2016

I. General Information

Instructor: Clarissa Sorensen-Unruh, M.S.
Office Hours[+]: 10:30am-12pm (M-R)
Office Number: Main Campus, JS 312B
Email: csorensen@cnm.edu
Twitter Handle: @RissaChem

Sections: 101 (7:30-8:45am MW in MS 301)
Online Office Hours available: 1-3pm R
Phone #: 505-224-4000 (ext. 50078)
Website: http://learn.cnm.edu
YouTube Channel: https://www.youtube.com/user/csoren1

[+]**Office hours are subject to change. Other office hours may be scheduled by appointment.**

II. Course Description

In this one-semester lecture class, both the conceptual and quantitative aspects of general chemistry are covered. No previous exposure to chemistry is assumed, but a large portion of the course will require some basic knowledge of mathematics. Since Chemistry 1410 is a requirement for individuals entering various health professions, an effort will be made to relate the material presented in the text to topics in the health sciences. The course consists of extensive online materials and one 75-minute lecture per week (which counts for 3 credit hours). A 3-hour lab (Chem. 1492L) is a recommended co-requisite. **Prerequisite:** Passing Reading 0950 or Accuplacer Reading score of 80 or equivalent **AND** passing Math 0930 or higher or Accuplacer Elementary Algebra score of 72 or equivalent. If a student does not meet the prerequisite for this course, he or she may be dropped from the class at any time during the term.

III. Essential Resources

- **Access to the textbook: *Introductory Chemistry***, by Nivaldo J. Tro. (5th ed. new or used or e-book (2 copies also on reserve at JMMC and Main libraries)), Pearson Education Inc.
- **Access to CNM Learn and CNM email:** Learning materials are delivered via CNM Learn. Important class announcements will be made via the class communication app (and probably via email too) and you should check both at least 2-3 times a week.
- **Mastering Chemistry (MC) Access Code**: MC is a homework grading system that will give you the practice you need to master the concepts in general chemistry. Homework and reading quizzes are delivered via MC. **You can access Mastering Chemistry through CNM Learn** (Instructions provided on the last two pages of the syllabus). The alternative way to access Mastering Chemistry, when CNM Learn is temporary unavailable, is via http://portal.mypearson.com/mypearson-login.jsp. **DO NOT USE** this website the 1st time you log into MC; you **MUST** go through CNM Learn to register for the class.
- **Learning Catalytics (LC) Access:** In class exercises are delivered via Learning Catalytics. If you have purchased the ebook and Mastering Chemistry bundle, Learning Catalytics is included with the bundle. If not, it can be purchased on https://learningcatalytics.com/
- **A scientific calculator** is required for this course as well. Inexpensive models may be purchased at stores such as Wal-Mart, K-Mart, Target, OfficeMax, Staples, etc. Two-line displays, such as those found in the series TI 30X II, tend to work best. If you are also taking Gen Chem I and II, you may want to invest in a TI 36X PRO.
- **Recommended:** Notebook and pen for note-taking before and after watching the video lectures.
- **Recommended:** Mastering Chemistry notebook which should be used to record what you have learned in MC and to make note of any problems you need to get help with.
- **Recommended:** From chapter 2 onwards, a printed periodic table (which I have posted to CNM Learn) is VERY helpful in class.

See the appendix of this syllabus for further information about to obtain each resource.

IV. Course Learning Outcomes

At the end of this course, students must demonstrate their ability to:

1. Examine the nature and changes of matter
2. Use the Periodic table to understand and describe elements and compounds
3. Describe molecules and compounds
4. Analyze chemical reactions
5. Solve chemical reaction calculations
6. Examine organic chemistry
7. Analyze Solutions
8. Explain Acids and Bases
9. Examine solids, liquids and gases
10. Introduce nuclear chemistry

V. Course Policy

1. **Cell-phones, computers pagers, iPods, and PDA's of any type must have limited usage during class unless we are engaging in Learning Catalytics or you'd like to ask me a question via email**. Text-messaging or use of social media for non-class related material is **not permitted**. ***Respect the learning environment*** and make sure your conversations are related to the course material.
2. **Attendence expectations**: **I will exercise my discretion to drop you from the class after you miss 15% of class time (either online or in class or both).** Classes will begin promptly and late arrival to class or leaving early is disrespectful of your classmates. If you need to do either, please do so respectfully and discretely.
3. **Final grades**: After the drop date (**4/1/16**), you will no longer be able to drop the class and you will be assigned a letter grade A-F. Grade boundaries are set by CNM and cannot be changed. I WILL NOT change final grades unless there has been a legitimate error in my grading.
4. **Exam policy**: You will need your CNM id, a calculator, a scantron (from the CNM bookstore), and at least one #2 pencil – ALL exams will be mostly multiple choice. Exams are given in class during the allotted times in the Schedule (see below); make-up exams are given in the Distance Learning Testing Center (http://www.cnm.edu/depts/testing/testingcenter.html). You will be provided with a periodic table and as much scratch paper as you need as well as a paper copy of the exam. To each midterm test, you may bring a 3" x 5" notecard with whatever information you chose handwritten on it. No material may be stuck to the card.
5. Cheating is taken very seriously and will result in automatic and immediate consequences.
6. **Withdrawal and Grading Options Policy:** You may only change your grading option to Credit/No-Credit if the course does not apply to your major OR your minor. You should check the CNM and your possible transfer university regulations regarding Credit/No-Credit if you are considering this option.
7. **PaperCut:** PaperCut is an element of the sustainability effort at CNM. Its purpose is to reduce paper usage. Each student has an online account with an allotment of 150 free printer pages per term. If this allotment runs out, additional pages may be purchased by the student. For more information, go to the PaperCut website: http://cnm.edu/papercut.

VI. Class Structure

During class time, you will be engaged in problem-solving activities in small groups. You will have the chance to work on harder (exam type and real world application) problems with the resources of your fellow classmates, myself and your SI leader. The key components of the class are:

- **BEFORE CLASS:** Detailed pre-class reading assignments and/or video lecture assignments are required before class begins.
- **IN CLASS:** I will follow up with the majority muddy points (from the last class's exit tickets) at the beginning of class to give further explanation and clarification. You will then work in small groups on assignments applying the material from the pre-class reading. You will be quizzed on your small group work individually throughout class via Learning Catalytics questions and/or by collected group work.
- **AFTER CLASS:** At the end of every class, students will submit a 1½-minute electronic survey (we'll call this an "exit ticket" and it will be posted on CNMLearn) using an electronic device. Each "exit ticket" will document

your thoughts and feelings regarding that day's materials and provide a mechanism to communicate any muddy points to your instructor. **The muddy point question is a chance for you to tell me what was most difficult or most interesting in your assigned preparation.**
Then, to deepen and fix your learning, you have an after-class homework assignment on MASTERING CHEMISTRY. **Get into the habit of doing your Mastering Chemistry within 24 hours of watching the lecture on the topic while it is still fresh in your mind.** This will save you time and contribute to better understanding and higher grades. Use the resources available (office hours, the SI, Communication App, and study groups) when you get stuck with a problem after you have given it your best effort. Expect weekly deadlines on Sundays at 11.59pm. **Your first MC assignment (Introduction to MC) is due on Sunday,** 1/24/16 at 11.59 pm.

Where to get help:

- **Ask questions** in class at any time, of your classmates, me, or your SI leader. Once you're out of class, feel free to ask your questions via the class communication app.
- **Attend office hours** and help sessions held by your SI leader: the SI leader will list her help session times on CNM LEARN.
- **Consider forming a study group.**
- **Consider joining the CNM Student Chemistry Society and/or attending their regular meetings on Saturdays.** (You can learn more about the chem society through the STEM UP folks: http://www.cnm.edu/depts/stemup)
- **Tweet me at @RissaChem.** Be sure to read the Twitter handout first, and **always use the hashtag #CNMCHEM1410** when you tweet so that all in the class can see your tweets. I will not respond to tweets without the appropriate hashtag.
- **Email me at csorensen@cnm.edu.** If you do not name the class you are in (i.e. CHEM 1410) within the email, I will not respond to it. Period. If I have not responded within 2 business days, or sooner if urgent, please check the class communication app as I have probably responded there and then feel free to email me again to remind me. In busy times, emails sometimes get buried.
- **Disability Resource Center:** if you have a psychological or medical condition that may affect your performance in the class, please consider enrolling here as soon as possible. They can provide a quiet place to take the tests, additional time, as well as the possibility of a note-taker and additional services, if there is a medically documented need. For more information, go to http://www.cnm.edu/depts/disability-resource-center
- **ACE Tutoring** (the Assistance Centers for Education) is a great resource if you cannot meet me or with your SI leader during our help sessions or office hours. Many options are available and most tutoring hours are offered as a first come first served service. Please contact your SI leader for further information or visit the website: http://www.cnm.edu/depts/tutoring/ACE_Tutoring_Home.html
- **Mastering Chemistry study area** (for additional videos, quizzes etc)
- **Textbook**: the end of chapter problems in blue have answers at the back of the book. This is a great free resource.

VII. Grading

Students' grades will be calculated out of a 100 point total:

Class Communication (5%)

- **If you don't do the reading and/or video watching, you will be lost in class!** Material in the reading assignments and video lectures will **NOT** necessarily be reviewed in class unless I am asked a question about it.
- Class Communication will be administered through a class communication app that will be announced (**Bb Discussions, Bb IM, and Twitter DM are all possibilities**). This is an opportunity for you all to ask questions about content we cover in class, connect with your fellow classmates, and ask questions of your professor. You will need to post at least 24 times to the app to maximize points earned. Your postings must have correct sentence structure and must be spell-checked. **Postings are graded on a participation basis; if you post with correct grammar and spelling on time then you will receive a 100% for that posting. Postings are graded at the end of the semester, although I will check their progress throughout the semester.**

In Class Exercises (10%)

- In Class Exercises will be administered via Learning Catalytics. If you have purchased the ebook and mastering chemistry bundle, Learning Catalytics is included with the bundle. The work on Learning Catalytics will be synchronous in class and then self-paced online after class, so you will be able to complete the work at your own pace as long as it is within the timeframe offered.

Mastering Chemistry Homework, Reading Quizzes, and Exam Practice (20%)

- You should expect to spend **2-3 hours per week** on your MC homework.
- For tutorial 'learning mode' (i.e. HW) questions, 6 attempts per question, no deductions made for incorrect answers until all 6 attempts are used up. No penalty for using 'hints' unless the work in the 'hints' is not completed.
- Occasional extra-credit questions will be assigned.
- Reading Quizzes are available on Mastering Chemistry, and are due the same night as the muddy point. While muddy points ask you to explain what you DON'T know, reading quizzes are used to test what you DO know. You will be able to attempt reading quizzes 3 times with the highest score counted.
- The week before each exam, you will have an 'Exam Practice' Mastering Chemistry assignment. Like an exam, you will have one attempt per question and no hints. If you score less than 90% on this MC assignment, you will be assigned an adaptive follow-up assignment. The program figures out where the gaps are in your knowledge and where you need more practice based on how you answered the original assignment, and it gives you questions to help build your skills in those areas in light of the up-coming exam. The follow-up assignment should take about 45 minutes and is due exactly 2 days after the due date of the parent assignment. The sooner you complete the parent assignment, the more time you will have to work on the follow-up. Doing the follow-up **ADDS POINTS** to your original score, and the highest of the 2 scores is counted. If you get more than 90% on the practice assignment, you will test out of the adaptive follow-up and automatically be assigned the extra credit.
- Late submissions accepted, subject to 10% penalty per day late, up to a maximum of 50% penalty. So, you can still complete a homework assignment even at the end of the semester for 50% of the original credit available.
- The Mastering Chemistry gradebook will be downloaded at 9pm on Wednesday, April 27th, so no further credit can be obtained after this. With all the extra credit factored in, you can score a maximum of 25% in your final course grade from the MC portion of the class.

Examinations (40%)

- Three major exams will be given throughout the semester in class.
- **There are NO make up exams.**
- The lowest exam will be dropped.
- All class tests will be cumulative (with up to 5 questions adapted from previous tests).

Final Exam (25%)

- It is a Math, Science, and Engineering policy that all courses require final evaluations.
- If you do not take the final exam, you will not be able to make up the missing credit for the class.
- The final exam in Chemistry 1410 is based on a national standard exam prepared by the American Chemical Society, which covers all material presented during the semester and will be given during the final class period.
- The final exam has 40 multiple choice questions.
- If Finals Week is cancelled by the school (snow day, etc.), then final grades for students will be calculated based on all work completed and assessed up to that point in the course.

Grading In Summary:

Mastering Chemistry Homework, Reading Quizzes, and Exam Practice	20%
(MC = Mastering Chemistry average * 0.20)	
In Class Exercises	10%
(ICE = In Class Exercises average * 0.10)	
Exit Tickets and Class Communication	5%
(MP = Final Muddy point average * 0.05)	
Exams (3 75-minute, the lowest exam is dropped)	40%
(E = Exam average (best 2 of 3) * 0.40)	
Final Exam	25%
(F = Final exam grade * 0.25)	

To estimate your grade at any point during the course, use the following formula:

MC + ICE + MP + E + F = Course grade

A = 90-100% B = 80-89% C = 70-79% D = 60-69% F = 59% or below

VII. Chemistry 1410 – Spring 2016 Lecture Schedule

Wk	Chapter	Lab for the week
1	Syllabus, 1 The Chemical World	*Lab on Main Campus doesn't start until WEEK 4 in order to better accommodate the move into the L Building.*
	2 Measurement and Problem Solving	
2		
	3 Matter and Energy	
3	4 Atoms and Elements	
	9 Electrons in Atoms and the Periodic Table	
4	**Review for Exam 1**	*Lab Safety, Math Skills* *Using Physical and Chemical Properties (Instructor Demos)* **LECTURE NOTE: Exam 1 will be given on 2/10/16 during class time.**
	Exam 1 (Ch. 1-4, 9)	
5	5 Molecules and Compounds	*Check In, Making Measurements,* *Using Physical and Chemical Properties (student portion)*
6	6 Chemical Composition	*Preparation of Elements from Compounds &* *Observing Atomic Line Spectra*
	7 Chemical Reactions	
7		*Identifying Ionic Compounds in Solution* *Naming Compounds (through ionic compounds)*
	8 Quantities in Chem Rxns	
8		*Identifying Cations in a Mixture* *Naming Compounds (covalent compounds and acids)*
	10 Chemical Bonding	
9	12 Liquids, Solids, and Intermolecular Forces	*Chemical Reactions,* *Lewis Structures and Molecular Models*
10	**Review for Exam 2**	*The Mole in Chemical Formulas* **LECTURE NOTE: Exam 2 will be given on 3/23/16 during class time.**
	Exam 2 (Ch. 5-8, 10)	
11	18 Organic Chemistry (omit 18.10 and 18.17)	*Preparation of Rochelle Salt: Synthesis of a Compound and Stoichiometric Calculations*
12	13 Solutions	*Organic Models and Nomenclature* *Organic Demos*
	14 Acids and Bases	
13	17 Radioactivity and Nuclear Chemistry	*Acids and Bases* ***Review for the Lab Final Exam*** ***(R/F/S Holiday)***
	11 Gases	
14	**Review for Exam 3**	***Lab Final Exam*** *(during regular lab period)* **LECTURE NOTE: Exam 3 will be given on 4/20/16 during class time.**
	Exam 3 (Ch. 12-14, 17, 18)	
15	**Review for Final Exam**	*Enzymatic Decomposition and Analysis of H_2O_2* **The Final Exam will be Wednesday, 4/27/16, from 7:30-8:45 am in MS 301.**
	Final Exam	

1st Note: The last day to drop without a grade of F or to change your grading option (letter grade, CR/NC, Audit) is **April 1st.** If you have any questions, please discuss them with your advisor. **Some changes may occur in the schedule as we proceed through the course. Changes will be announced in class and through class communication. 2nd NOTE:** COB = close of business (please refer to Distance Learning Testing Center schedule as needed: **http://www.cnm.edu/depts/ac/testingcenter.php)**

IX. Appendix

1. Textbook purchase options (from Fall 2014 but may contain errors):

Hardbound book with MasteringChemistry access code	$222 (bookstore)
MasteringChemistry access code with ebook only (+LC)	$147 (bookstore)
MasteringChemistry access code with ebook only (+LC)	$110.00 (online via CNM Learn)
MasteringChemistry without ebook	$66.00 (online via CNM Learn)
Learning Catalytics without ebook or MC	$12.00 for 6 month access $20.00 for 12 month access

2. How to get started with CNM Learn:

- Point your web browser to http://learn.cnm.edu
- Log-in using your CNM Net ID and Password.
- You *must enable pop-up windows* in order for CNM Learn to function on the computer.
- You will also *need Adobe Acrobat Reader* in order to read a lot of the files on the web site. Acrobat Reader is already installed on CNM pod computers and if you do not have it on your home computer it is a free download.
- All materials in this course fall under copyright laws and should not be downloaded, distributed, or used by students for any purposes *outside* of this course.

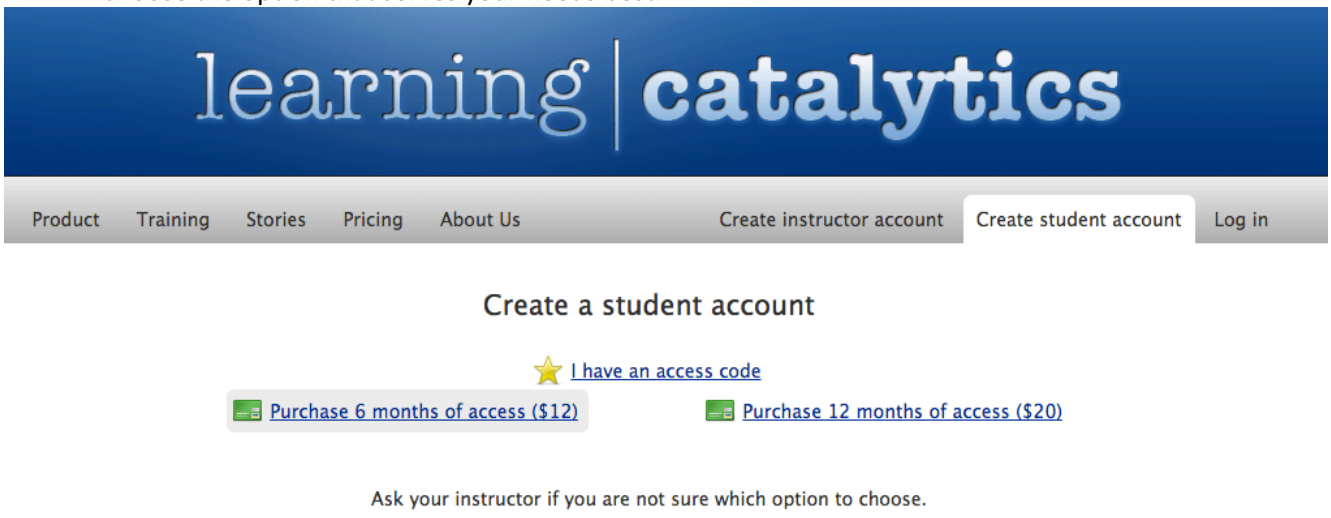
CNM Learn automatically records student activities, including but not limited to: your first and last access to the course, number of times you have accessed the course, and pages you have accessed. This data may be accessed by the instructor to evaluate class participation and to identify students having difficulty using Bb Learn features.

3. Calculators:

You need a scientific non-programmable calculator for exams (not a graphing calculator). IN EXAMS, YOU MAY NOT USE CALCULATORS ON CELLPHONES OR COMPUTERS. If your calculator has any of the following buttons -- PROG, PGM, CLEAR, CLR -- it is probably programmable **and will not be accepted**. If your calculator has a large screen and can graph functions, it is programmable and will not be accepted. If you are unsure, please bring your calculator into my (or the SI's) office hours before the 1st exam and I will check it for you.

4. How to get started with Learning Catalytics:

- You can access learning catalytics through the website: https://learningcatalytics.com/
- Choose the "Create Student Account" tab from the right side of the top menu.
- Choose the option that serves your needs best:

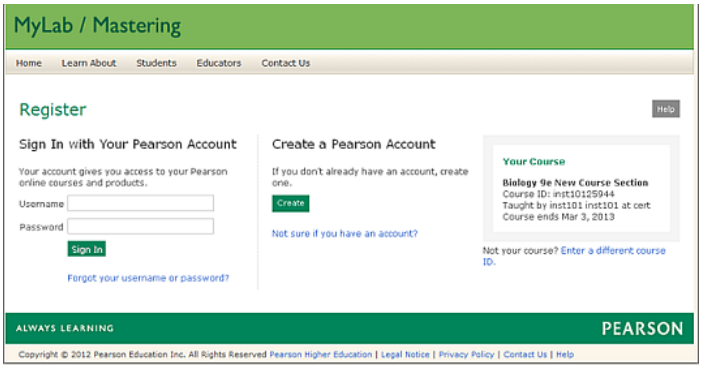


How do I register for Pearson Mastering in CNM Learn?

FIRST Sign In

To sign in for the first time:

1. Sign in to your **CNM Learn** course.
2. Choose the "Mastering Chemistry" tab on the side menu then click on a Pearson "**Mastering**" Link.
3. The Register page appears:



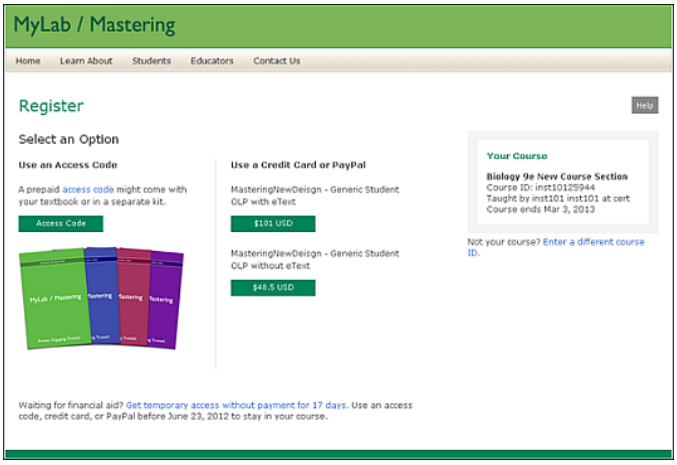
- If you **already have a Pearson account**, enter your **username and password**.
  (NOTE: If you have used websites such as MyMathLab, MyEconLab, MyITLab, or any Mastering product, you have a Pearson account)

OR

- If you **do not have a Pearson account**, create an account by clicking **Create**.

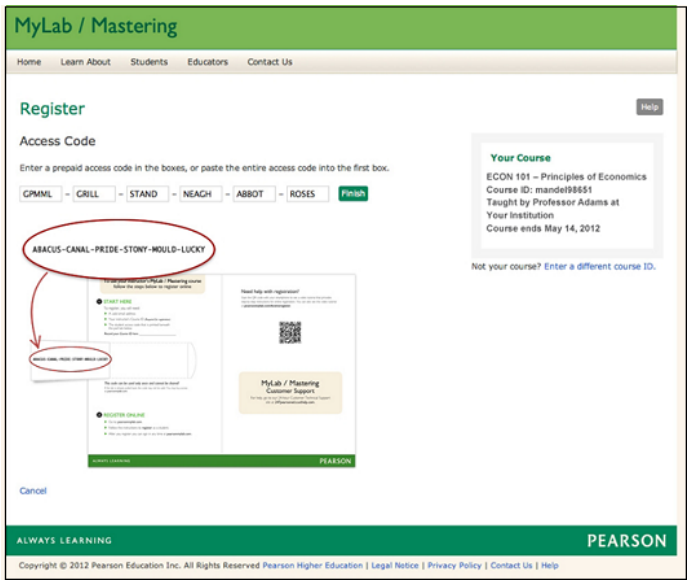
NEXT Register and Pay for Your Course

After you have signed in to MyLab and Mastering, you will see the "Select an Option" page asks you how you want to pay for your course.



You can pay in one of these ways:

Payment Method 1 - Click **Access Code** to go to a page where you can enter your access code as shown on the screenshot below. This code comes with your textbook or may be provided in a separate kit.



Payment Method 2 - If you don't have an access code, on the Select an Option page, click the green button showing the price to pay. You can pay directly using a credit card or PayPal, depending on your textbook.

Payment Method 3 - If you are not ready to pay at this time, click **Get temporary access without payment for 17 days** at the bottom of the Select an Option page to get temporary access if you're waiting for financial aid. After 17 days, you will need to either pay with a credit card or enter an access code.

Registration Complete

After your registration is complete, you see the confirmation page and get a confirmation email.