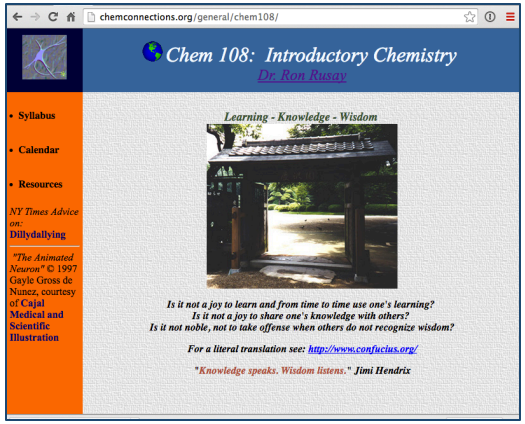
Greetings & Welcome to Chem 108

Introductory Chemistry

http://chemconnections.org/general/chem108/



Please hold ALL of your questions. They will ALL be answered shortly in the slides that follow.

Dr. Ron Rusay
E-mail: rrusay@chemconnections.org (preferred) or rrusay@dvc.edu

Office Hours (PS 235): MW 10:00 – 11:00; Tuesday, Thursday, Friday by appointment, daily e-mail replies usually within 24 hours.
Class: MW 11:10-12:35 (PS 275)
Discussion/Lab:
12:45-3:55 M (PS 221) *sec. 2102*
12:45-3:55 W (PS 221) *sec. 2116*

CONNECTIONS

Show of hands

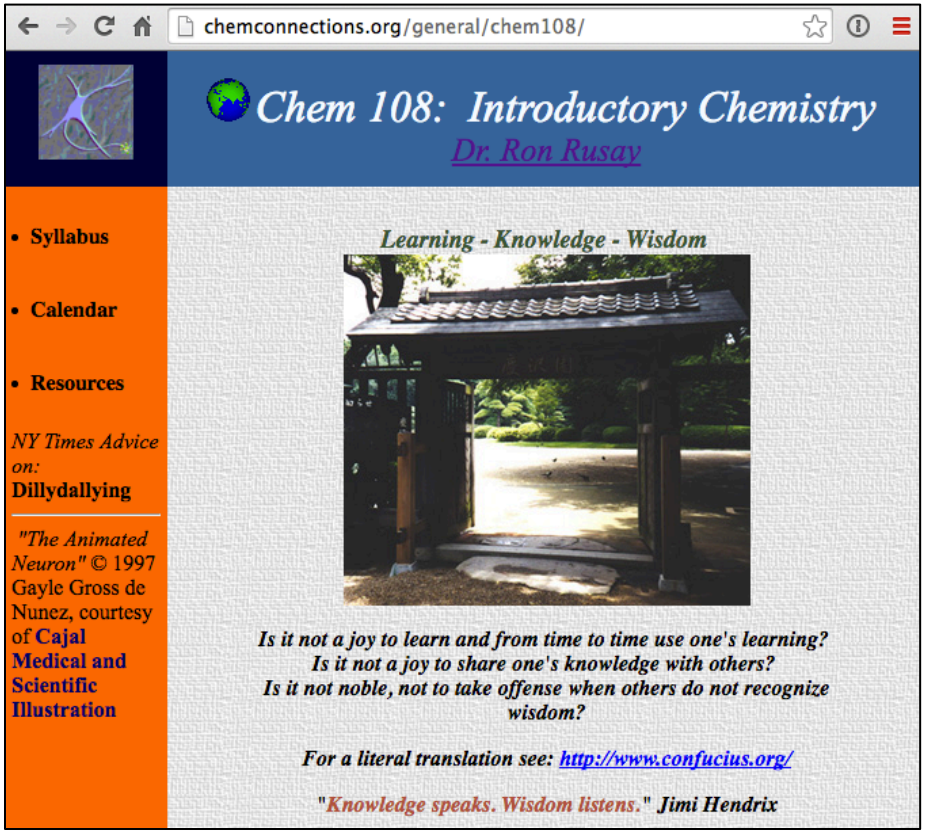
I personally have or have easy (24/7) access to:

A. a smart phone
B. a personal computer
C. the Internet
D. a printer

If you DO NOT have or have access to B.), C.), or D.), they are available on the DVC campus. Please make an appointment to meet with Dr. R. as soon as possible to get more information and work out a plan to conveniently use them.

Take out your smart phone.

If you don't have it with you, introduce yourself to a class mate and share theirs.



Open DVC wifi.
Connect to the Internet.
Go to:

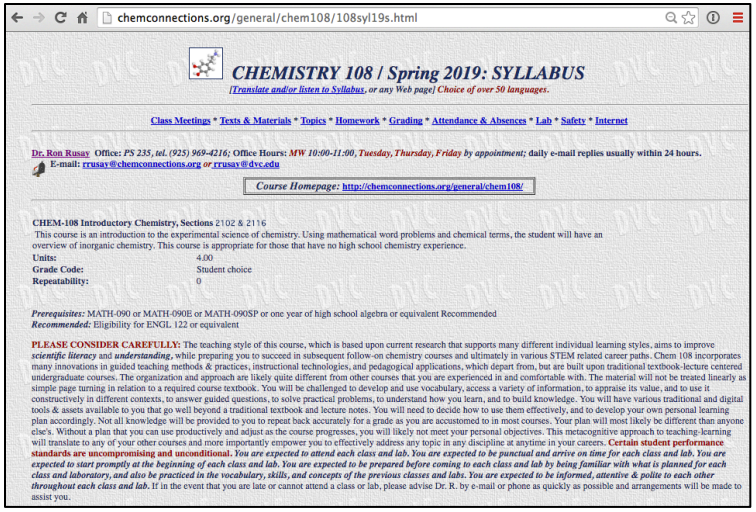
http://chemconnections.org/general/chem108/

Click on Syllabus link

Chem 108

http://chemconnections.org/general/chem108/108syl19s.html

Syllabus link



chemconnections.org/general/chem108/108syl19s.html

CHEMISTRY 108 / Spring 2019: SYLLABUS

[Translate and/or listen to Syllabus, or any Web page] Choice of over 50 languages.

Class Meetings * Texts & Materials * Topics * Homework * Grading * Attendance & Absences * Lab * Safety * Internet

Dr. Ron Rusay Office: *PS 235, tel. (925) 969-4216;* Office Hours: *MW 10:00-11:00, Tuesday, Thursday, Friday by appointment;* daily e-mail replies usually within 24 hours.
E-mail: rrusay@chemconnections.org *or* rrusay@dvc.edu

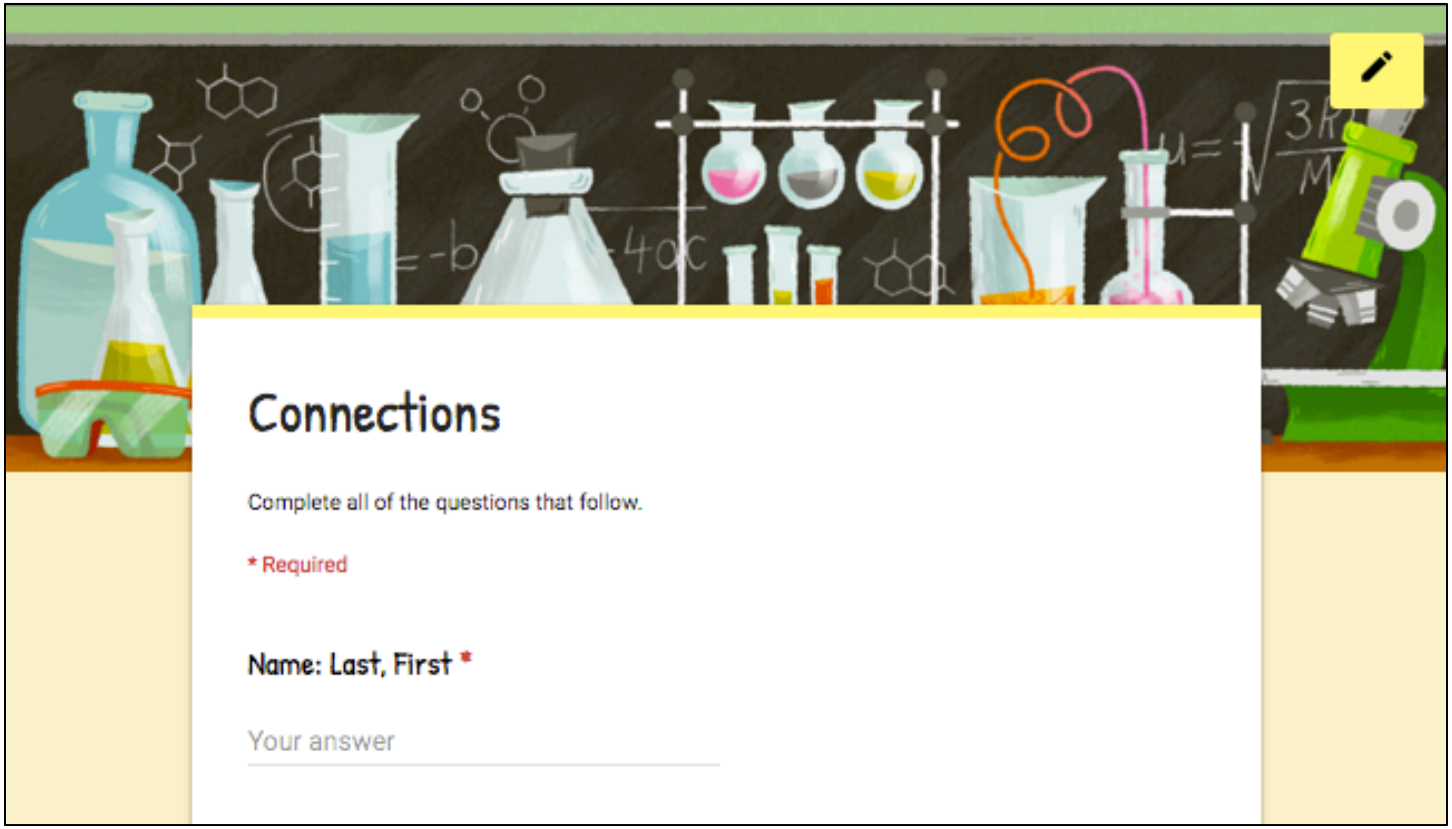
Course Homepage: http://chemconnections.org/general/chem108/

CHEM-108 Introductory Chemistry, Sections 2102 & 2116
This course is an introduction to the experimental science of chemistry. Using mathematical word problems and chemical terms, the student will have an overview of inorganic chemistry. This course is appropriate for those that have no high school chemistry experience.
Units: 4.00
Grade Code: Student choice
Repeatability: 0

Prerequisites: MATH-090 or MATH-090E or MATH-090SP or one year of high school algebra or equivalent Recommended
Recommended: Eligibility for ENGL 122 or equivalent

PLEASE CONSIDER CAREFULLY: The teaching style of this course, which is based upon current research that supports many different individual learning styles, aims to improve ***scientific literacy*** and ***understanding***, while preparing you to succeed in subsequent follow-on chemistry courses and ultimately in various STEM related career paths. Chem 108 incorporates many innovations in guided teaching methods & practices, instructional technologies, and pedagogical applications, which depart from, but are built upon traditional textbook-lecture centered undergraduate courses. The organization and approach are likely quite different from other courses that you are experienced in and comfortable with. The material will not be treated linearly as simple page turning in relation to a required course textbook. You will be challenged to develop and use vocabulary, access a variety of information, to appraise its value, and to use it constructively in different contexts, to answer guided questions, to solve practical problems, to understand how you learn, and to build knowledge. You will have various traditional and digital tools & assets available to you that go well beyond a traditional textbook and lecture notes. You will need to decide how to use them effectively, and to develop your own personal learning plan accordingly. Not all knowledge will be provided to you to repeat back accurately for a grade as you are accustomed to in most courses. Your plan will most likely be different than anyone else's. Without a plan that you can use productively and adjust as the course progresses, you will likely not meet your personal objectives. This metacognitive approach to teaching-learning will translate to any of your other courses and more importantly empower you to effectively address any topic in any discipline at anytime in your careers. **Certain student performance standards are uncompromising and unconditional.** ***You are expected to attend each class and lab. You are expected to be punctual and arrive on time for each class and lab. You are expected to start promptly at the beginning of each class and lab. You are expected to be prepared before coming to each class and lab by being familiar with what is planned for each class and laboratory, and also be practiced in the vocabulary, skills, and concepts of the previous classes and labs. You are expected to be informed, attentive & polite to each other throughout each class and lab.*** If in the event that you are late or cannot attend a class or lab, please advise Dr. R. by e-mail or phone as quickly as possible and arrangements will be made to assist you.

- Please sign the roster next to your name on the clipboard that is circulating.
- If you are not listed, or here to add Chem 108, clearly print your name, DVC id & e-mail address on the last page, and next to your name indicate the lab section you wish to add: **M (2102) or W (2116, or both (M/W**) if you are flexible.
- **Class size is limited to 28 max due to lab safety.** Anyone on the roster who is absent today will be placed last on the roster after the wait listed and new sign-ins . **28 lab drawers** will be assigned in lab to the first 28 on the completed list after today's class. **Add codes will be provided at the end of the first lab.**
- Pick up a hard copy of the course syllabus on leaving class today.



Go to:
http://chemconnections.org/general/chem108/Connections Guide.html

Enter your Last Name, and First Name

Then the following 2 questions.

CONNECTIONS
Chemistry, STEM & Applications

Why am I enrolling in CHEM 108?

A. It is a required course that is needed to meet my higher education goals. I have to take it.
B. Chemistry is very easy to me and I need the 4 credit A to boost my GPA.
C. I am very interested in science and chemistry.
D. I'm not sure.

Show of hands; i-clickers or Reef App to be used in future class meetings.)
https://app.reef-education.com/#/account/create

CONNECTIONS

Chemistry, STEM & Applications

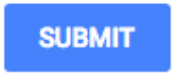
My plan after completing Chem 108 is to:

A. take *General Chemistry :* (If @ DVC: Chem 120)

B. take *Integrated Inorganic, Organic, and Biological Chemistry:* (If @ DVC: Chem 107)

C. take *Introduction to Organic and Biochemistry:* (If @ DVC: Chem 109).

D. NOT take other chemistry courses after Chem 108.



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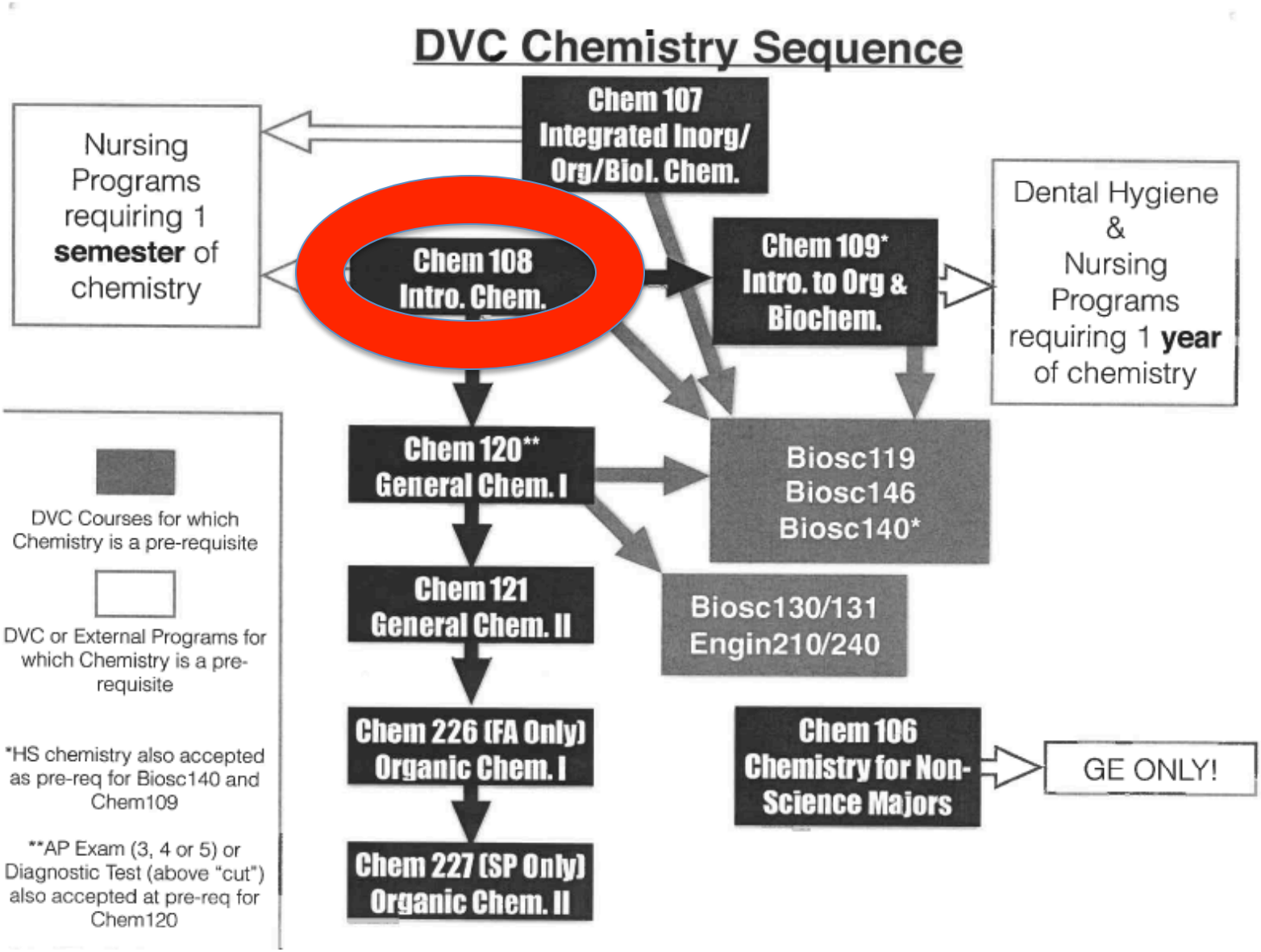
CONNECTIONS

Requirements Met by DVC Chemistry Courses

	Chem 106 Chemistry for Non-Science Majors	Chem 107 Integrated Inorg/ Org/Biol Chem.	Chem 108 Introductory Chem.	Chem 109 Intro. to Org. & Biochem.	Chem 120 Gen. Chem. I	Chem 121 Gen. Chem. II
Chemistry courses that fulfill GE science requirements						
DVC GE	X		X	X	X	X
IGETC	X		X	X	X	X
CSU GE	X	X	X	X	X	X
Chemistry courses that fulfill AS degree requirements						
Natural Science AS	X	X	X	X	X	X
Health Education AS			X			
Kinesiology AAT					X	
Sports Med/Athl Training AS		X	X	X	X	
Chemistry courses that fulfill AS degree requirements (ONE REQUIRED)						
Allied Health AS		X	X	X	X	
Life Science AS		X		X	X	
Enviro Science AS			X		X	
Chemistry courses that ARE REQUIRED to earn AS degrees						
Dental Hygiene AS			X	X		
Civil Eng AS					X	
Elec/Comp Eng AS					X	
Mech Eng AS					X	
Geology AS					X	X
Resp. Therapy AS		X	X			

Chem 226 and 227 (Organic Chemistry I & II) are required for transfer in some majors but are not currently part of any DVC degree program.

CONNECTIONS

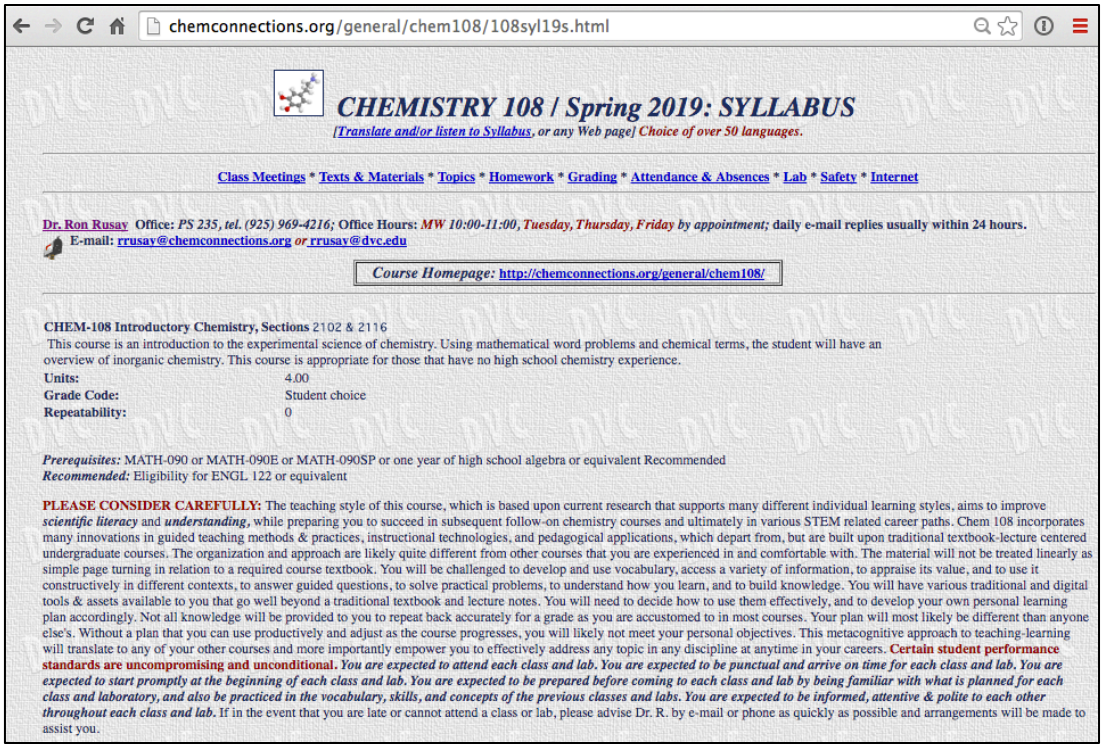


Chem 108: Class/ Lab

http://chemconnections.org/general/chem108/108syl19s.html

$$$???

First Timers:
Tuition Free
(Get information from DVC A &R)


chemconnections.org/general/chem108/108syl19s.html

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$$$???

Course Materials:
Kept as low as possible

Please read carefully, after today's class.

Chem 108

http://chemconnections.org/general/chem108/108syl19s.html

Resources: (REQUIRED/MUST HAVE)

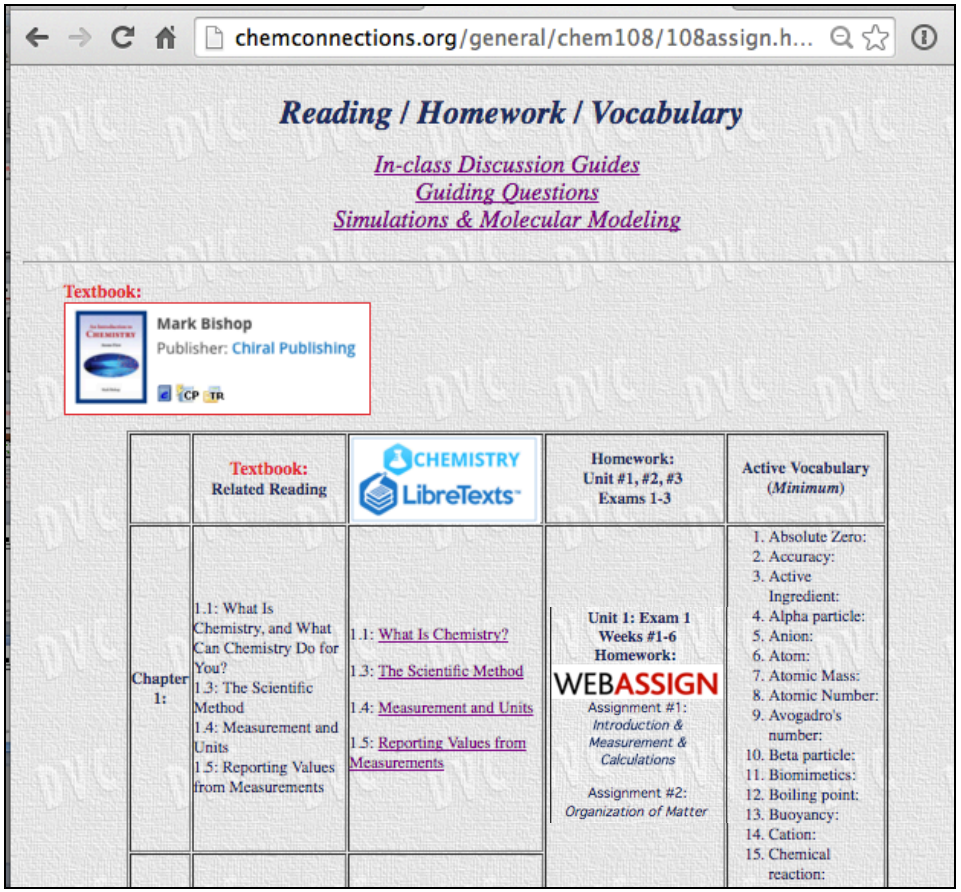
1. **Chem 108 Lab Manual (Available in the DVC Bookstore: $17.95)**
2. **Webassign: Class Key, dvc 1518 5716, provides access to all of the Webassign resources through your account, which includes An Introduction to Chemistry e-book with associated questions and supporting resources ($41.00) DVC $56.70 (?) (Hard copies of An Introduction to Chemistry, Atoms First ISBN978-0-9778105 can be purchased @ $74.45.)**
3. **i<clicker: The older version is acceptable, as well as the newer . 2 and i-clicker+ versions ($5.00-$40.00 on-line & DVC); i-clicker Reef Access Card for smartphone ($16.20) DVC Bookstore**
4. **Personal e-mail account. (DVC/CCCCD "Insite" account not recommended, but ok.)**
5. **Notebook: 3 ring recommended**
6. **Access to the Internet (Can be limited, such as only on the DVC Campus or at free WiFi hotspots)**
7. **Lab safety glasses with side shields or goggles on sale by DVC Chem Club**

Chem 108

http://chemconnections.org/general/chem108/108assign.html

From Homepage Click on Resources link

Resources:
Reading /
Active Vocabulary/
Guiding Questions /
Simulations & Molecular Modeling



Libretext aka ChemWiki

alternative to or additional resource for textbook

https://chem.libretexts.org

Must enroll in Webassign regardless of choice.

Chem 108

http://chemconnections.org/general/chem108/108syl19s.html

Grading:

1. i-clicker questions/in-class participation + answers to on-line Guiding Questions + on-line simulations/ quizzes are valued at 15% of the TOTAL grade.
2. Webassign completed work is valued at 15% of the TOTAL grade.
3. Laboratory experiments, activities, pre- & post-lab questions, worksheets and simulations are valued at 25% of the TOTAL grade.
4. 3 exams, each comprising 15% of the TOTAL grade, and, in total, equal to **45%** of the TOTAL grade.

Chem 108

http://chemconnections.org/general/chem108/108syl19s.html

Exam Dates: 3/4, 4/15, 5/22. [Cell phones will not be allowed during exams and quizzes.]

Final letter grades will be assigned based on an overall average in the following ranges: 87-100 A; 75-86 B; 60-74 C; 50-59 D; <50 F, using normalized class averages.

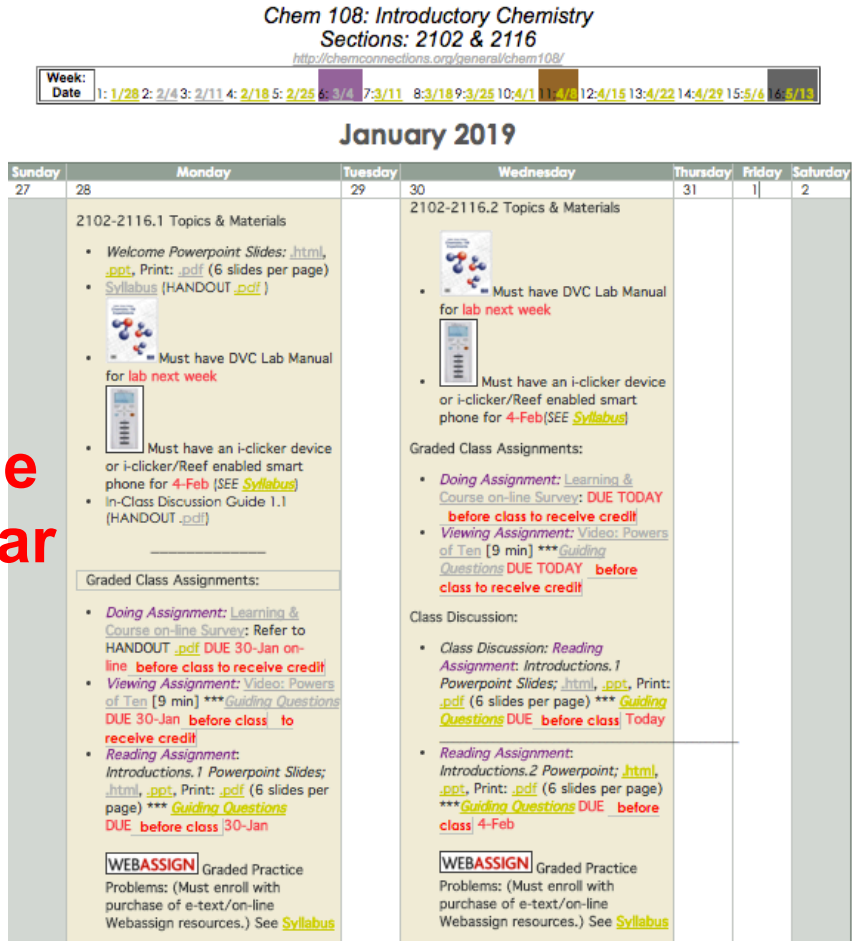
NOTE: The DVC Code of Conduct will be strictly enforced. Cheating and plagiarism are unacceptable and will unconditionally result in a failing grade

SEE: DVC Academic College Policies

Chem 108: Beginning of a Journey

http://chemconnections.org/general/chem108/calendar-108-s19.html

From Homepage Click on Calendar link



Chem 108: Introductory Chemistry
Sections: 2102 & 2116
http://chemconnections.org/general/chem108/

Week: / Date — 1: 1/28 2: 2/4 3: 2/11 4: 2/18 5: 2/25 6: 3/4 7: 3/11 8: 3/18 9: 3/25 10: 4/1 11: 4/8 12: 4/15 13: 4/22 14: 4/29 15: 5/6 16: 5/13

January 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	29	30	31	1	2

2102-2116.1 Topics & Materials

- *Welcome Powerpoint Slides:* .html, .ppt, Print: .pdf (6 slides per page)
- Syllabus (HANDOUT .pdf)
- Must have DVC Lab Manual for lab next week
- Must have an i-clicker device or i-clicker/Reef enabled smart phone for 4-Feb (*SEE Syllabus*)
- In-Class Discussion Guide 1.1 (HANDOUT .pdf)

Graded Class Assignments:

- *Doing Assignment:* Learning & Course on-line Survey: Refer to HANDOUT .pdf DUE 30-Jan on-line before class to receive credit
- *Viewing Assignment:* Video: Powers of Ten [9 min] ***Guiding Questions DUE 30-Jan before class to receive credit
- *Reading Assignment*: *Introductions.1 Powerpoint Slides;* .html, .ppt, Print: .pdf (6 slides per page) *** *Guiding Questions* DUE before class 30-Jan

WEBASSIGN Graded Practice Problems: (Must enroll with purchase of e-text/on-line Webassign resources.) See Syllabus

2102-2116.2 Topics & Materials

- Must have DVC Lab Manual for lab next week
- Must have an i-clicker device or i-clicker/Reef enabled smart phone for 4-Feb (*SEE Syllabus*)

Graded Class Assignments:

- *Doing Assignment:* Learning & Course on-line Survey: DUE TODAY before class to receive credit
- *Viewing Assignment:* Video: Powers of Ten [9 min] ***Guiding Questions DUE TODAY before class to receive credit

Class Discussion:

- *Class Discussion: Reading Assignment*: *Introductions.1 Powerpoint Slides;* .html, .ppt, Print: .pdf (6 slides per page) *** *Guiding Questions* DUE before class Today
- *Reading Assignment*: *Introductions.2 Powerpoint;* .html, .ppt, Print: .pdf (6 slides per page) ***Guiding Questions DUE before class 4-Feb

WEBASSIGN Graded Practice Problems: (Must enroll with purchase of e-text/on-line Webassign resources.) See Syllabus

Follow the Hearing/Viewing-Reading-Doing links in the calendar to lead you on your path.

Chem 108

Refer to the course calendar page **TODAY** & **frequently**. The current week's calendar is set the beginning of the week, and is then static. Plan by each week……. *Execute day-by-day. Meet all due dates!!*

Before coming to each class/lab meeting: ***Hear/Read, View & Do*** the scheduled activity links: ***Videos, Powerpoint Class Slides, Notes, Worksheets, Simulations, etc.***

1. ***Answer all on-line Guiding Questions***.
2. Review and consider logical answers & ***explanations for the embedded Powerpoint i-clicker questions,*** *then refer to the correct answers, which are presented in class*. Bring any questions for discussion to the class meetings and Office Hours.
3. ***Complete WEBASSIGN Homework, all lab assignments, activities & worksheets.***
4. Individually and collaboratively use all available resources to develop a sufficient level of ***mastery of the class/lab vocabulary, problems, and topics*** *to understand the chemistry / science and be able to explain concepts clearly to someone else*.

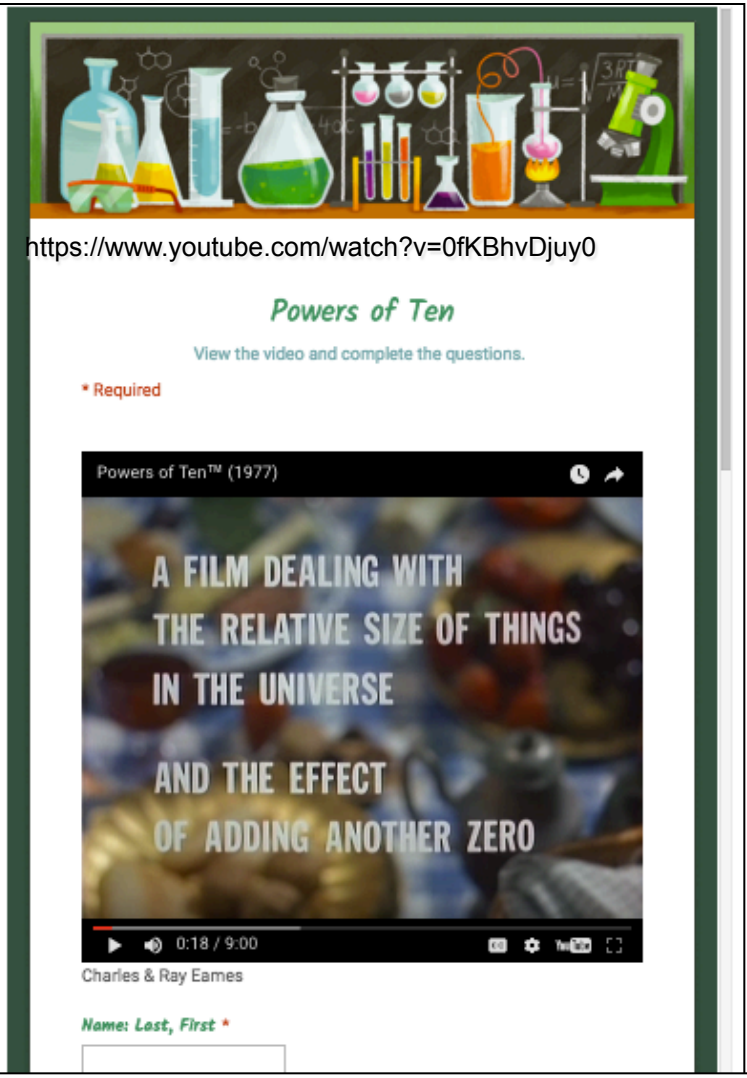
Hearing/Viewing: Guiding Questions (GQ)

Measurements & Relative Scale

http://chemconnections.org/general/chem108/Powers%20of%20Ten-Guide.html

1. Answer all on-line Guiding Questions.

First GQ assignment Due before next class.

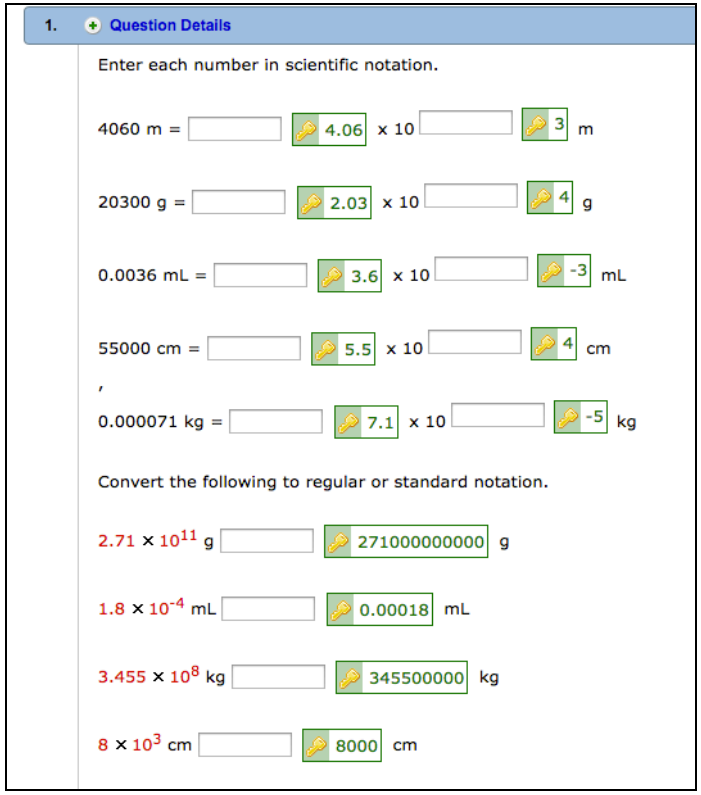


From the calendar links, submit responses on-line; graded weekly.

WebAssign Homework

https://www.webassign.net/v4cgi/selfenroll/classkey.html
Class Key: dvc 1518 5716

http://chemconnections.org/general/chem108/Student_Quick_Start_Guide_SE.pdf



1. Question Details

Enter each number in scientific notation.

4060 m = [ ] 4.06 x 10 [ ] 3 m

20300 g = [ ] 2.03 x 10 [ ] 4 g

0.0036 mL = [ ] 3.6 x 10 [ ] -3 mL

55000 cm = [ ] 5.5 x 10 [ ] 4 cm

0.000071 kg = [ ] 7.1 x 10 [ ] -5 kg

Convert the following to regular or standard notation.

2.71×10^{11} g [ ] 271000000000 g

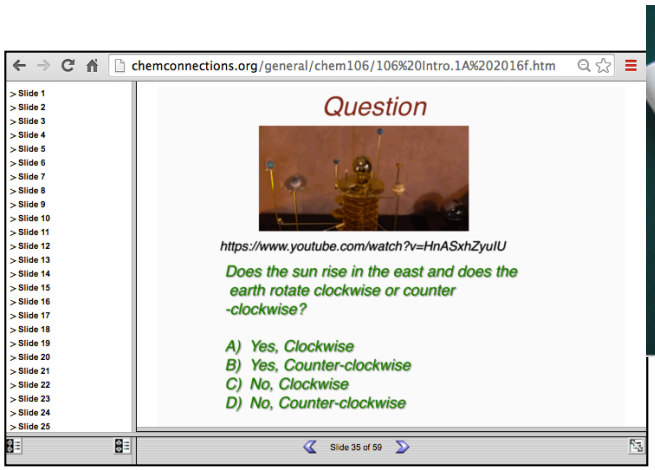
1.8×10^{-4} mL [ ] 0.00018 mL

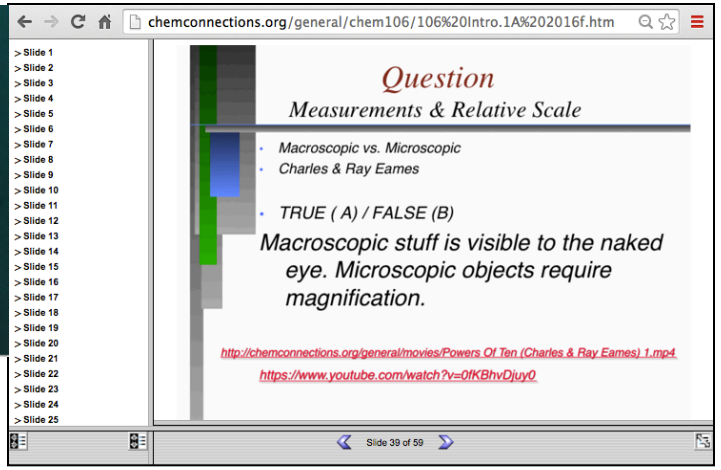
3.455×10^{8} kg [ ] 345500000 kg

8×10^{3} cm [ ] 8000 cm

Reading: Powerpoint Slides

Embedded i-clicker Questions

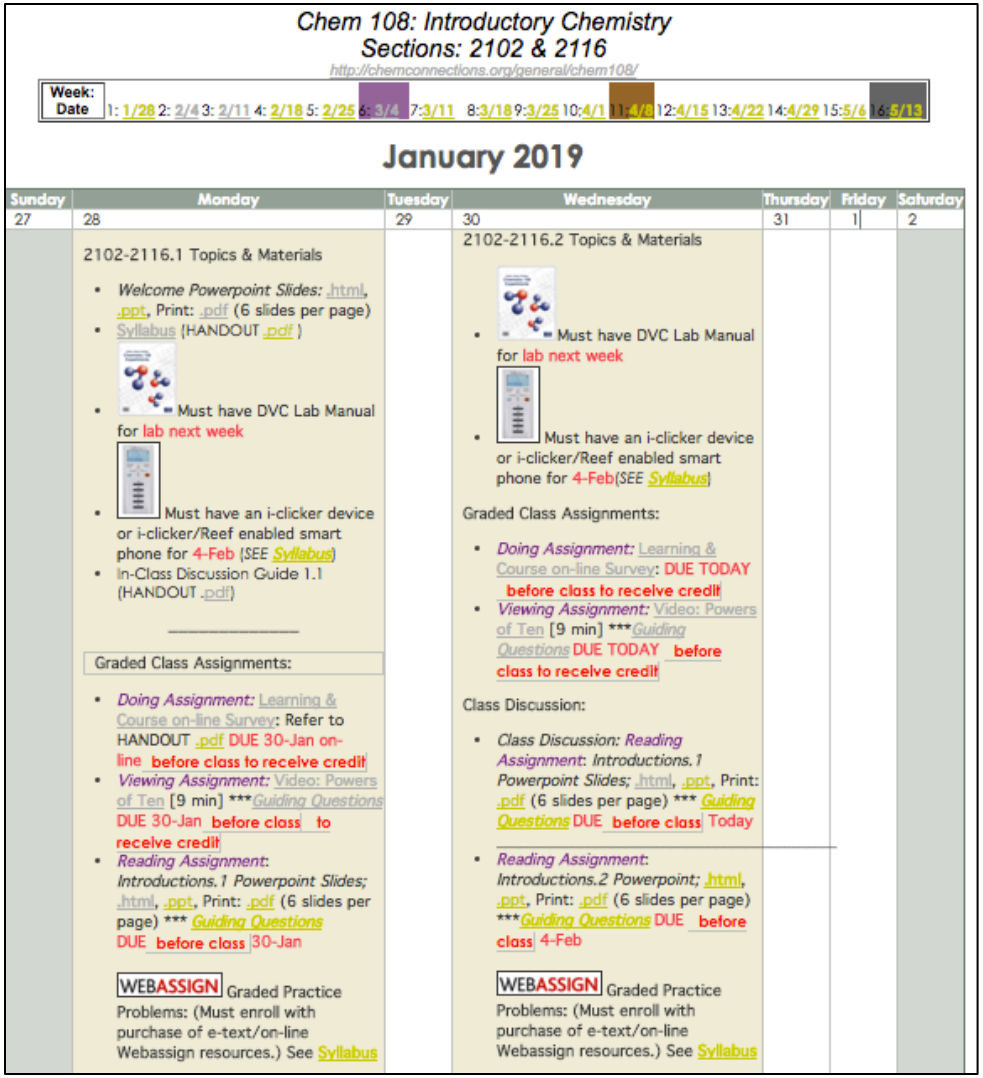




Read Powerpoint slides before class (can be printed), consider embedded questions; answers will be provided in class. One of these questions will be asked @ the start of the following class. ***Only answers submitted with a personal, registered i-clicker or smart phone will receive credit.***

These slides & questions will be the basis for a significant part of exams.

Refer to Calendar's Next & Future Classes/Labs



Chem 108: Introductory Chemistry
Sections: 2102 & 2116
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WEBASSIGN Graded Practice Problems: (Must enroll with purchase of e-text/on-line Webassign resources.) See Syllabus

2102-2116.2 Topics & Materials

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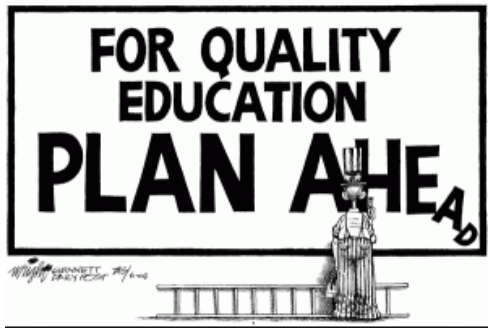
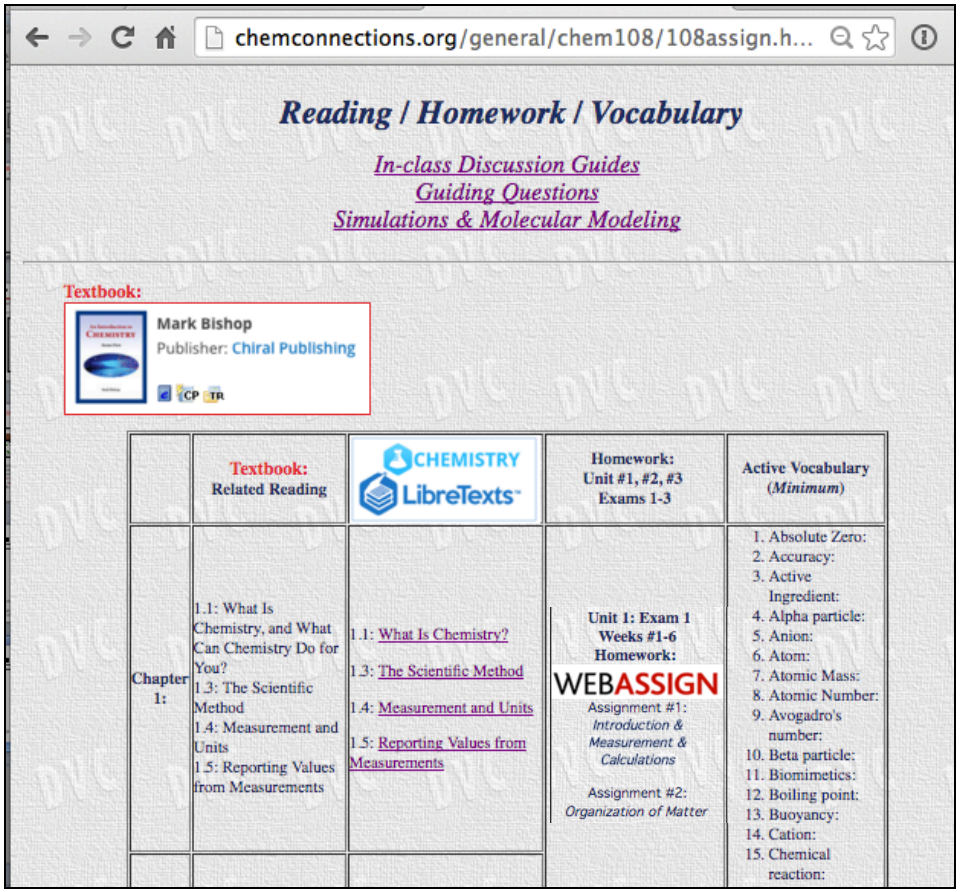
http://chemconnections.org/general/chem108/calendar-108-s19.html

The calendar is dynamic and has the class plan for the period through Exam-1. Beyond the current week it is tentative, but very useful for planning.



Also Refer to Resources Page



chemconnections.org/general/chem108/108assign.h...

Reading / Homework / Vocabulary

In-class Discussion Guides
Guiding Questions
Simulations & Molecular Modeling

Textbook:

Mark Bishop
Publisher: Chiral Publishing

	Textbook: Related Reading	CHEMISTRY LibreTexts	**Homework: Unit #1, #2, #3 Exams 1-3**	**Active Vocabulary (*Minimum*)**
Chapter 1:	1.1: What Is Chemistry, and What Can Chemistry Do for You? 1.3: The Scientific Method 1.4: Measurement and Units 1.5: Reporting Values from Measurements	1.1: What Is Chemistry? 1.3: The Scientific Method 1.4: Measurement and Units 1.5: Reporting Values from Measurements	**Unit 1: Exam 1** **Weeks #1-6** **Homework:** WEBASSIGN Assignment #1: *Introduction & Measurement & Calculations* Assignment #2: *Organization of Matter*	1. Absolute Zero: 2. Accuracy: 3. Active Ingredient: 4. Alpha particle: 5. Anion: 6. Atom: 7. Atomic Mass: 8. Atomic Number: 9. Avogadro's number: 10. Beta particle: 11. Biomimetics: 12. Boiling point: 13. Buoyancy: 14. Cation: 15. Chemical reaction:

http://chemconnections.org/general/chem108/108assign.html

The Resources page includes links related to assignments and textbook and LibreTexts reading.

How much time beyond class & lab time will all of this take?

http://chemconnections.org/general/chem108/calendar-108-f18.html

All of the outside assignments & homework are designed for ~1.5-2 hrs/day, but the answer will depend on you!

Budget your time & get help when needed!! DON'T WAIT!!