

Greetings & Welcome to Chem 108 sec. 2373

Introductory Chemistry

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



Dr. Ron Rusay

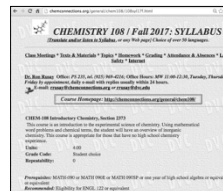
E-mail: rusay@chemconnections.org (preferred) or rusay@dvc.edu

Office Hours (PS 235): MW 11:00 – 12:30; Tuesday, Thursday, Friday by appointment, daily e-mail with replies usually within 24 hours.

Discussion/Lab: 2:00–4:50 W (PS 221)

Chem 108

<http://chemconnections.org/general/chem108/108sy117f.html>



- 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 second page of clipboard.
- Pick up a hard copy of the course syllabus on leaving class today.

CONNECTIONS

Chemistry, STEM & Applications

Why CHEM 108?

- Required course needed to meet my higher education goals. I have to take it.
- Chemistry is very easy to me and I need the 4 credit A to boost my GPA.
- I am very interested in science and chemistry.
- I'm not sure.

Show of hands; (i-clickers to be used next meeting.)



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
GETC	X		X		X	X
CSU GE	X	X	X		X	X
Chemistry courses that fulfill AS degree requirements						
Natural Science AS	X	X	X		X	X
Health Education AS			X		X	
Kinesiology AS*					X	
Sports Med/ATI Testing AS		X	X	X	X	
Chemistry courses that fulfill AS degree requirements (CHE REQUIRED)						
Allied Health AS		X	X	X	X	
Life Science AS		X		X	X	
Science Science AS			X		X	
Chemistry courses that ARE REQUIRED to earn AS degrees						
Dental Hygiene AS			X	X		
Civil Eng AS					X	
ElectComp Eng AS					X	
Mech Eng AS					X	
Geology AS					X	X
Nurs. Therapy AS		X	X			

Chem 106 and 107 (degrees) Chemistry I & II are required for transfer to some majors but are not currently part of any DVC degree program.



CONNECTIONS

Chemistry, STEM & Applications

My plans after Chem 108:

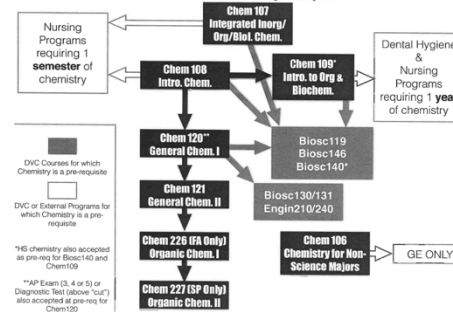
- I plan to take *General Chemistry*: (If @ DVC: Chem 120)
- I plan to take *Integrated Inorganic, Organic, and Biological Chemistry*: (If @ DVC: Chem 107)
- I plan to take *Introduction to Organic and Biochemistry*: (If @ DVC: Chem 109).
- I **DO NOT** plan to take any other Chemistry courses after Chem 108.

Show of hands; (i-clickers to be used next meeting.)



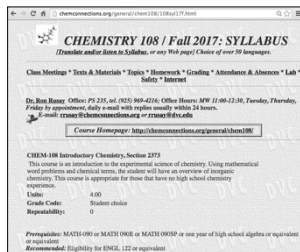
CONNECTIONS

DVC Chemistry Sequence



Chem 108: Class/ Lab

<http://chemconnections.org/general/chem108/108syl17f.html>



Please read carefully.

Chem 108

<http://chemconnections.org/general/chem108/108syl17f.html>

Resources: **(REQUIRED/MUST HAVE)**

1. Chem 108 Lab Manual (Available in the DVC Bookstore: \$17.95)
2. Webassign Class Key: dvc 7642 7360 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); iClicker Reef Access Card for smartphone (\$16.20)
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>

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

Textbooks	Related Reading	Active Vocabulary (Minimum)
1. What Is Chemistry? (The Scientific Method)	1. Absolute Zero	1. Absolute Zero
2. Chemistry and the Scientific Method	2. Acids	2. Acids
3. The Scientific Method	3. Alkali metals	3. Alkali metals
4. Measurement and Units	4. Alkali	4. Alkali
5. Reporting Values from Measurements	5. Atomic Mass	5. Atomic Mass
6. Unit Conversions	6. Atomic Number	6. Atomic Number
7. Unit Conversions	7. Avogadro's number	7. Avogadro's number
8. Reporting Values from Measurements	8. Boiling point	8. Boiling point
9. Unit Conversions	9. Boiling point	9. Boiling point
10. Reporting Values from Measurements	10. Boiling point	10. Boiling point
11. Unit Conversions	11. Boiling point	11. Boiling point
12. Reporting Values from Measurements	12. Boiling point	12. Boiling point
13. Unit Conversions	13. Boiling point	13. Boiling point
14. Reporting Values from Measurements	14. Boiling point	14. Boiling point
15. Unit Conversions	15. Boiling point	15. Boiling point
16. Reporting Values from Measurements	16. Boiling point	16. Boiling point
17. Unit Conversions	17. Boiling point	17. Boiling point
18. Reporting Values from Measurements	18. Boiling point	18. Boiling point
19. Unit Conversions	19. Boiling point	19. Boiling point
20. Reporting Values from Measurements	20. Boiling point	20. Boiling point
21. Unit Conversions	21. Boiling point	21. Boiling point
22. Reporting Values from Measurements	22. Boiling point	22. Boiling point
23. Unit Conversions	23. Boiling point	23. Boiling point
24. Reporting Values from Measurements	24. Boiling point	24. Boiling point
25. Unit Conversions	25. Boiling point	25. Boiling point
26. Reporting Values from Measurements	26. Boiling point	26. Boiling point
27. Unit Conversions	27. Boiling point	27. Boiling point
28. Reporting Values from Measurements	28. Boiling point	28. Boiling point
29. Unit Conversions	29. Boiling point	29. Boiling point
30. Reporting Values from Measurements	30. Boiling point	30. Boiling point
31. Unit Conversions	31. Boiling point	31. Boiling point
32. Reporting Values from Measurements	32. Boiling point	32. Boiling point
33. Unit Conversions	33. Boiling point	33. Boiling point
34. Reporting Values from Measurements	34. Boiling point	34. Boiling point
35. Unit Conversions	35. Boiling point	35. Boiling point
36. Reporting Values from Measurements	36. Boiling point	36. Boiling point
37. Unit Conversions	37. Boiling point	37. Boiling point
38. Reporting Values from Measurements	38. Boiling point	38. Boiling point
39. Unit Conversions	39. Boiling point	39. Boiling point
40. Reporting Values from Measurements	40. Boiling point	40. Boiling point
41. Unit Conversions	41. Boiling point	41. Boiling point
42. Reporting Values from Measurements	42. Boiling point	42. Boiling point
43. Unit Conversions	43. Boiling point	43. Boiling point
44. Reporting Values from Measurements	44. Boiling point	44. Boiling point
45. Unit Conversions	45. Boiling point	45. Boiling point
46. Reporting Values from Measurements	46. Boiling point	46. Boiling point
47. Unit Conversions	47. Boiling point	47. Boiling point
48. Reporting Values from Measurements	48. Boiling point	48. Boiling point
49. Unit Conversions	49. Boiling point	49. Boiling point
50. Reporting Values from Measurements	50. Boiling point	50. Boiling point

Libretext aka ChemWiki



Chem 108

<http://chemconnections.org/general/chem108/108syl17f.html>

Grading:

1. i-clicker questions/in-class participation + answers to on-line Guiding Questions + on-line simulations /quizzes are valued at 10% of the TOTAL grade.
2. Webassign completed work is valued at 10% 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, and a final exam, which equal two hour exams in value, comprise 55% of the TOTAL grade.

Chem 108

<http://chemconnections.org/general/chem108/108syl17f.html>

Tentative Exam Dates: 9/18, 10/30, 12/4 Final Exam:
TBA. . [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/chem106/calendar-108-f17.html>

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

Chem 108

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

1. Before coming to each class/lab meeting: **Hear/Read, View & Do** the scheduled activity links: **Videos, Powerpoint Class Slides, Notes, Worksheets, Simulations, etc.**
2. **Answer all on-line Guiding Questions.**
3. 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.
4. **Complete WEBASSIGN Homework, all lab assignments, activities & worksheets.**
5. 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.**

Chem 108 Survey

<http://chemconnections.org/general/chem108/learning.html>

From the calendar link, submit responses on-line for the survey, which will provide your first grade.

Hearing/Viewing: Guiding Questions

Measurements & Relative Scale

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



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

Powers of Ten:

Scale

Powers of 10	
Exponential Number	Ordinary Number
$1 \times 10^6 = 10 \times 10 \times 10 \times 10 \times 10 \times 10$	1,000,000
$1 \times 10^3 = 10 \times 10 \times 10$	1,000
$1 \times 10^2 = 10 \times 10$	100
$1 \times 10^1 = 10$	10
$1 \times 10^0 = 1$	1
$1 \times 10^{-1} = \frac{1}{10}$	0.1
$1 \times 10^{-2} = \frac{1}{10} \times \frac{1}{10}$	0.01
$1 \times 10^{-3} = \frac{1}{10} \times \frac{1}{10} \times \frac{1}{10}$	0.001
$1 \times 10^{-6} = \frac{1}{10} \times \frac{1}{10} \times \frac{1}{10} \times \frac{1}{10} \times \frac{1}{10} \times \frac{1}{10}$	0.000 001

Scientific Notation

Scientific Notation: A single digit followed by a decimal and a power of ten.

$$\boxed{} \text{ D . D D } \times 10^n$$

power of 10


Examples: 2,345 mL and 0.002340 g

$$2,345 \text{ mL} = 2.345 \times 10^3 \text{ mL} \quad 0.002340 \text{ g} = 2.340 \times 10^{-3} \text{ g}$$

Reading: Powerpoint Slides

Embedded i-clicker Questions

<http://chemconnections.org/general/chem106/106%20Intro.1A%202016f.htm>



The first image shows a computer screen with a question: "How many lone pairs of electrons are on the central atom of the molecule shown below?" The molecule is a central atom bonded to four other atoms. The options are: A) 0, B) 1, C) 2, D) 3, E) 4. The second image shows a hand holding an i-clicker device. The third image shows a computer screen with a question: "How many lone pairs of electrons are on the central atom of the molecule shown below?" The molecule is a central atom bonded to four other atoms. The options are: A) 0, B) 1, C) 2, D) 3, E) 4.

Read all 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 will receive credit.** These slides & questions will be the basis for a significant part of exams.

FOR QUALITY EDUCATION
PLAN AHEAD

Refer to Calendar's Next Class/Lab

<http://chemconnections.org/general/chem106/calendar-108-f17.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.