Chemistry 1A: General Chemistry Sections 01 and 02
Fall 2017

Instructor: Dr. Megan Brunjes Brophy
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Class website: For Fall 2017, I will be using Schoology to manage course documents and relevant material. You may register for an account at https://app.schoology.com/register.php The **10-digit access code for the course is N9623-WGXPT**

Class Meetings

Section 01	*Section 02*	
MWF 11:30 am – 12:20 pm, SC1102	MWF 11:30 am – 12:20 pm, SC1102	(Lecture)
MW 7:30 am – 10:20 am, SC2202	MW 2:30 pm – 5:20 pm, SC2202	(Lab)

This course syllabus is a contract. Please read it carefully and completely in its entirety before asking me any questions regarding the course schedule, content, requirements, grading, etc. You are expected to adhere to the De Anza College Student Code of Conduct Administrative Policy 5510 at all times.

This class is divided into two separate instructional periods: a lecture period devoted to the primary course material and a lab period for conducting lab experiments. Everyone will have the same lecture period, but a different lab period depending on which section you are enrolled in. ***At De Anza College the lab and lecture may not be taken as separate courses under any circumstances.***

Office Hours

Monday	Tuesday	Wednesday	Thursday	Friday
1:15 – 2:15 pm 5:30 – 6:00 pm	*By appointment*	1:15 – 2:15 pm 5:30 – 6:00 pm	*By appointment*	9:00 – 10:00 am

My office is SC1220. If the door to the second floor of SC1 is locked, pick up the phone and dial 8338. This will ring my office, and I will be able to let you in. To set up a time to meet with me on Tuesday or Thursday, please send me an email.

Course Description
An introduction to the structure and reactivity of matter at the molecular level. Application of critical reasoning to modern chemical theory and structured numerical problem solving. Development of molecular structure from rudimentary quantum mechanics, including an introduction to ionic and covalent bonding. Chemical problem solving involving both formula and reaction stoichiometry employing the unit analysis method. An introduction to thermochemistry and a discussion of the first law of thermodynamics.

Prerequisites
CHEM 25 or CHEM 30A or satisfactory score on the Chemistry Placement Test; MATH 114 or equivalent. Advisory: EWRT 1A or EWRT 1AH or ESL 5.

Student Learning Outcomes
Construct balanced reaction equations and illustrate principles of stoichiometry.
Apply the first law of thermodynamics to chemical reactions.
Identify and explain trends in the periodic table.

Textbook and Materials

1. ***Chemistry: The Molecular Nature of Matter and Change with Advanced Topics***, 8th Edition by Silberberg, M. S. and Amateis, P. (ISBN 978-1-259-74109-8)
2. A scientific or graphing calculator. Phones may not be used as a calculator on exams or quizzes.
3. Chemistry 1A Laboratory Manual: https://www.deanza.edu/chemistry/Chem1A.html (online only)
4. Laboratory notebook with carbon copies.
5. Laboratory safety goggles (not safety glasses).
6. Disposable latex or nitrile gloves. (*Recommended*)

Resources

1. Math, Sciences, and Technology Resource Center (MSTRC) Tutoring. The MSTRC offers tutoring for the Chemistry 1 sequence and is located in room S43 in the S-quad. Their website is: https://www.deanza.edu/studentsuccess/mstrc/
2. Disability Support Programs Services. The mission of DSPS is to ensure access to the college's curriculum, facilities, and programs. Their website is: https://www.deanza.edu/dsps/
3. Resources for undocumented students may be found at http://www.deanza.edu/students/undoc-students.html.

Important Dates

October 8th – Last day to drop with full refund
October 9th – Census date
October 20th – Last day to request pass/no credit
November 17th – Last day to withdraw ("W" recorded)

Exam Schedule and Tentative Content

Exam 1	October 11th	Chapters 1-3
Exam 2	October 27th	Chapters 4 and 6
Exam 3	November 13th	Chapters 7 and 8
Exam 4	December 4th	Chapters 9, 10 and 11.1
Final Exam	December 11th	Cumulative

There will be four midterm exams and one cumulative final exam. The date of the final exam is determined by the college and cannot be moved. Plan your holiday travel accordingly.

Grading Breakdown

Lecture (70% of total points)	
Homework	15%
Quizzes	5%
Exams	30%
Final	18%
Participation	2%
Lab (30% of total)	
Pre-lab and notebook	10%
Reports	10%
Lab final	8%
Clean-up	2%

Grade Scale

Final %	Grade
98 - 100	A+
91 - 97	A
89 - 91	A–
85 - 88	B+
81 - 84	B
79 - 81	B–
75-78	C+
68-74	C
63-67	D+
50-62	D
<50%	F

Lecture (70%)
Your attendance and active participation is expected at every lecture period. Absences may be excused in case of a verified emergency (e.g. doctor's note or police report). The lecture participation grade (2%) must be earned through attendance and behavior. Late arrivals and early departures are distracting for the whole class (and me!), so arrive on time and stay for the whole class period. I strongly encourage taking your own notes in lecture, and computers will be unnecessary. Put your phone on silent or Do Not Disturb. If you must take a phone call in case of emergency, quietly leave the room before answering the phone.

Homework (*15%*)
Consistent practice is an essential component of learning, and homework questions will often be similar to exam questions. Homework for this quarter will be recorded and submitted online through Connect. Connect is available as a package when you purchase your textbook from the De Anza College bookstore. The Connect website for this class is: http://connect.mheducation.com/class/m-brophy-fall-2017. Connect allows you to check your work before submitting a question, offers hints, and can take you through guided solution. Start your homework assignments early, spend some time on them, and learn from your mistakes.

Lecture Quizzes (*5%*)
Quizzes will be given 1-3 times per week in lecture. Quizzes will be handed out at the beginning of class and you will be given 5-10 minutes to complete each quiz. Quizzes will **not** be announced in advance and students arriving after the quiz period will not be given an opportunity to make up the quiz. Exceptions may be made in the case of **excused** absences on a case-by-case basis.

Exams (*30%*)
There will be four midterm exams, each worth 7.5% of your final grade. Early and late exams will not be administered, and missing an exam **will result in a zero** without proof of an excused absence. If you need any accommodations for exams, DSPS will be able to notify me through Clockwork.

Final (*18%*)
The final exam will be cumulative. The final exam will be administered on **Monday, December 11th from 11:30am –1:30pm**. This date and time are determined by De Anza College and cannot be moved under any circumstances. If you cannot make this time, you should not enroll in the class.

Lab (30%)
Chemistry is an experimental science, and the laboratory is a major component of the course. De Anza College does not offer make-up labs, and you ***must attend the laboratory section that you are registered for*** to complete the required labs. Everyone gets one excused absence (no grade penalty), after the second excused absence you will receive a zero for the lab, and after the third absence you will fail the lab and course. ***Make sure you come to lab.***

Your timely attendance is expected at every lab. The beginning of each lab period is reserved for lab lecture. ***If you are more than 10 minutes late for lab lecture, you will lose points for that lab.***

You must clean up your work area before leaving each lab. ***Failure to do so will result in a loss of points for that lab.***

Lab Notebooks (10%)
You must maintain a bound laboratory notebook with duplicate copies. Lab notebook pages must be submitted for ***all*** labs, including those with lab reports. Due dates are listed on the Lecture and Laboratory schedule later in this syllabus. Lab notebook guidelines can be found on the course website.

Lab Reports (10%)
You will write four formal lab reports for Chemistry 1A. These will be for labs A3 (Hydrate), A4 (Precipitation Reaction and the Limiting Reagent), A7 (Vinegar Titration), and A9 (Redox Titration). Lab report guidelines can be found on the course website. All lab reports must be printed and ***must be turned in at the beginning of class on the day they are due.***

Lab final (8%)
There will be one lab exam in this course. The final will be an open lab-notebook exam, and you may refer to any information that is in your lab notebook. The final will cover material, calculations, and analysis related to your laboratory experiments.

Clean-up (2%)
Each student is required to sign up for two lab periods in which they will be responsible for after-lab clean-up. This involves staying to end of lab, making sure the common lab areas and balance area is clean, the waste bottles are closed, etc. In addition, each student is responsible for cleaning their own materials and work area.

Lecture Schedule and Homework Due Dates

The schedule below is a guide for the quarter and may change at any time. Please read the recommended chapter sections BEFORE coming to class.

Week	Date	Day	Lecture and Readings	Homework
1	9/25	M	Introduction and class overview *Chapter 1.1-1.3*	
	9/27	W	Mathematical methods *Chapter 1.4-1.5*	Introductions "quiz" on Schoology Upload a selfie to your profile.
	9/29	F	Atomic structure *Chapter 2.1-2.5*	Chapter 1 homework due
2	10/2	M	Elements, compounds, and mixtures *Chapter 2.6-2.9*	
	10/4	W	The mole and stoichiometry *Chapter 3.1-3.2*	Chapter 2 homework due
	10/6	F	Chemical equations *Chapter 3.3-3.4*	
3	10/9	M	Water as a solvent and precipitation *Chapter 4.1-4.3*	Chapter 3 homework due
	10/11	W	**Exam 1: Chapters 1-3**	
	10/13	F	Proton transfer: acid-base reactions *Chapter 4.4, 4.7*	
4	10/16	M	Electron movement: redox reactions *Chapter 4.5-4.6*	
	10/18	W	Thermodynamics: energy conversions *Chapter 6.1-6.2*	Chapter 4 homework due
	10/20	F	Thermodynamics: heat flow *Chapter 6.3-6.4*	
5	10/23	M	Thermodynamics: Hess's law *Chapter 6.5-6.6*	
	10/25	W	Interaction of light and matter *Chapter 7.1-7.2*	Chapter 6 homework due
	10/27	F	**Exam 2: Chapters 4 & 6**	
6	10/30	M	Bohr model of the atom and uncertainty *Chapter 7.2-7.3*	
	11/1	W	Quantum numbers and orbital shape *Chapter 7.4*	
	11/3	F	Electron configurations *Chapter 8.1-.8.2*	Chapter 7 homework due

7	11/6	M	The periodic table *Chapter 8.2*	
	11/8	W	Periodic trends *Chapter 8.3-8.4*	*November 9th:* Chapter 8 homework due
	11/10	F	*Veteran's Day Holiday* *(no class)*	
8	11/13	M	**Exam 3: Chapters 7 & 8**	
	11/15	W	Valence electrons and ionic bonds *Chapter 9.1-9.2*	
	11/17	F	Covalent bonds *Chapter 9.3-9.4*	
9	11/20	M	Electronegativity *Chapter 9.5*	
	11/22	W	Lewis dot structures and molecular shape *Chapter 10.1-10.2*	Chapter 9 homework due
	11/24	F	*Thanksgiving Holiday* *(no class)*	
10	11/27	M	Molecular shape and polarity *Chapter 10.2-10.3*	
	11/29	W	Orbital hybridization *Chapter 11.1*	Chapter 10 homework due
	12/1	F	Valence bond theory and orbital overlap *Chapter 11.2*	
11	12/4	M	**Exam 4: Chapters 9-11.1**	
	12/6	W	Molecular orbital theory *Chapter 11.3*	
	12/8	F	Molecular orbital theory *Chapter 11.3*	Chapter 11 homework due
12	12/11	M	***Final Exam: Cumulative*** ***11:30 am – 1:30 pm*** *Last class*	-

Laboratory Safety

From the American Chemical Society Safety In Academic Laboratories Guidelines, 7th Ed., the following mandatory minimum safety requirements must be followed by all students and be rigorously enforced by all Chemistry faculty:

1) **Chemistry Department-approved safety goggles purchased from the De Anza College bookstore (NOT safety glasses) must be worn at all times once laboratory work begins, including when obtaining equipment from the stockroom or removing equipment from student drawers**, and may not be removed until all laboratory work has ended and all glassware has been returned to student drawers.
2) **Shoes that completely enclose the foot** are to be worn at all times; NO sandals, open-toed, or open-topped shoes, or slippers, even with socks on, are to be worn in the lab.
3) Shorts, cut-offs, skirts or pants exposing skin above the ankle, and sleeveless tops may not be worn in the lab: **ankle-length clothing must be worn at all times.**
4) Hair reaching the top of the shoulders must be tied back securely.
5) Loose clothing must be constrained.
6) Wearing "...jewelry such as rings, bracelets, and wristwatches in the laboratory..." should be discouraged to prevent "...chemical seepage in between the jewelry and skin...".
7) **Eating, drinking, or applying cosmetics in the laboratory is forbidden at ALL times, including during lab lecture.**
8) Use of electronic devices requiring headphones in the laboratory is prohibited at ALL times, including during lab lecture.
9) Students are advised to inform their instructor about any pre-existing medical conditions, such as pregnancy, epilepsy, or diabetes, that they have that might affect their performance.
10) Students are required to know the locations of the eyewash stations, emergency shower, and all exits.
11) Students may not be in the lab without an instructor being present.
12) Students not enrolled in the laboratory class may not be in the lab at any time after the first lab period of each quarter.
13) Except for soapy or clear rinse water from washing glassware, **NO CHEMICALS MAY BE POURED INTO THE SINKS**; all remaining chemicals from an experiment must be poured into the waste bottle provided.
14) Students are required to follow the De Anza College Code of Conduct at all times while in lab: “horseplay”, yelling, offensive language, or any behavior that could startle or frighten another student is not allowed during lab.
15) Strongly recommended: Wear Nitrile gloves while performing lab work; wear a chemically resistant lab coat or lab apron; wear shoes made of leather or polymeric leather substitute.

Reckless behavior will not be tolerated. If your actions endanger the health and safety of yourself or someone else you will be asked to leave and you will receive a zero for the day.

Laboratory Schedule and Notebook / Report Due Dates

Week	Date	Day	Laboratory Schedule	Lab notebook and report due dates
1	9/25	M	Introduction and check-in	Introduction and check-in
	9/27	W	Lab A1: Measurement	
	9/29	F	-	-
2	10/2	M	Lab A2: Nomenclature	Lab A1 notebook due in lab
	10/4	W	Lab A3: Hydrate	Lab A2 notebook due in lab
	10/6	F		-
3	10/9	M	Lab A3: Hydrate	-
	10/11	W	Lab A4: Precipitation	-
	10/13	F	-	Lab A3 report due in lecture Lab A3 notebook due in lecture
4	10/16	M	Lab A4: Precipitation	-
	10/18	W	Lab A4: Precipitation	-
	10/20	F		-
5	10/23	M	Lab A5: Reactions	Lab A4 report due in lab Lab A4 notebook due in lab
	10/25	W	Lab A5: Reactions	
	10/27	F		-
6	10/30	M	Lab A6: Conductivity	Lab A5 notebook due in lab
	11/1	W	Lab A6: Conductivity	-
	11/3	F		-
7	11/6	M	Lab A7: Titration	Lab A6 notebook due in lab
	11/8	W	Lab A7: Titration	-
	11/10	F	-	-
8	11/13	M	Lab A8: Calorimetry	-
	11/15	W	Lab A8: Calorimetry	Lab A7 notebook due in lab Lab A7 report due in lab
	11/17	F		-
9	11/20	M	Lab A9: Redox	Lab A8 notebook due in lab
	11/22	W	Lab A9: Redox	-
	11/24	F		
10	11/27	M	Lab A10: Hydrogen	Lab A9 notebook due in lab Lab A9 report due in lab
	11/29	W	Lab A11: Structures	Lab A10 notebook due in lab
	12/1	F		-
11	12/4	M	Lab A11: Structures	
	12/6	W	**Lab Final** Check out	Lab A11 notebook due in lab
	12/8	F		-
12	12/11	M	*Finals Week* *No Classes*	-