

ANOKA-RAMSEY COMMUNITY COLLEGE
COURSE SYLLABUS

Course:	Chemistry 1020-01: Interpretive Chemistry. 4 credits, Spring 2009
Prerequisite:	MATH 0200 or equivalent
Lecture:	Section 01: MW 10:00 am – 11:15 am G202
Laboratory:	Section 11: T 8:00 am – 9:50 am E226 Section 12: W 8:00 am – 9:50 am E226 Section 13: T 1:00 pm – 2:50 pm E226 Section 14: M 3:00 pm – 4:50 pm E226
Instructor:	Professor Andrew (Andy) Aspaas, Office E224
E-mail (preferred):	andrew.aspaas@anokaramsey.edu
Telephone:	763-433-1108
Course Webpages:	http://webs.anokaramsey.edu/aspaas/1020 (Notes, audio/video, links, announcements) http://www.masteringchemistry.com (Online homework) http://www.anokaramsey.edu/onlineProg (D2L : postlab quizzes, discussion boards, grades)
Office Hours: (all are in E224)	M 9:00 am – 9:50 am; 11:30 am – 1:20 pm; 5:00 – 5:50 pm T 11:00 am – 12:50 pm; 3:00 – 3:50 pm W 9:00 am – 9:50 am; 11:15 – 11:50 am (additional office hours available by appointment)
Lab Manager:	Daniel Harmon, Office CC-E225, 763-433-1813, daniel.harmon@anokaramsey.edu

COURSE OUTCOMES

Upon successful completion of the course, the student should be able to:

1. Demonstrate the ability to solve problems and demonstrate knowledge of concepts in the following areas:
 - a. States and classification of matter
 - b. Measurements and dimensional analysis
 - c. Atomic theory and bonding theory
 - d. Inorganic nomenclature
 - e. Organic chemistry
 - f. Stoichiometry and the mole concept
 - g. Reaction types
 - h. Liquids, solids, and solutions
 - i. Introductory acid-base chemistry
2. Demonstrate the following laboratory abilities:
 - a. Collecting data using a variety of equipment
 - b. Recording and analyzing data in tables and graphs
 - c. Formulating and testing hypotheses
 - d. Laboratory and chemical safety and waste disposal
 - e. Effectively communicating results in oral and written form
 - f. Working effectively and cooperating in groups

REQUIRED MATERIALS

Textbook: Introductory Chemistry, 3rd Edition, Nivaldo J. Tro;

Ebook available on <http://www.masteringchemistry.com> for \$79.50

MasteringChemistry Access: bookstore bundled with text or separately, also available on [masteringchemistry.com](http://www.masteringchemistry.com)

Lab Manual: Interpretive Chemistry Laboratory Manual, 2009 Edition, ARCC Staff

Scientific calculator (with LOG button)

Outside-class access to an internet-connected computer at home **or** using the ARCC computer labs

ADDITIONAL RESOURCES

Ball, David W., Essential Algebra for Chemistry Students (available in bookstore)

Study Guides and Solutions Manual

Website Links: Available at <http://webs.anokaramsey.edu/chemistry> and <http://webs.anokaramsey.edu/aspaas/>

On-Campus Tutoring: Schedule will be posted at http://www.anokaramsey.edu/StudentServices/cr_chemistry.cfm and at the Academic Support Center

BE RESPECTFUL, BE RESPONSIBLE, RISE TO THE CHALLENGE

By enrolling in this course, you have become a welcome member of a *community of learners*, an honor and a privilege for each one of us. Your membership in this community and your success in this course are dependent upon your ability to do the following:

Be Respectful. Respect your instructor as an expert in his or her subject area and as the person responsible for facilitating a productive course for everyone. Respect each of your classmate's right to a valuable class experience, free of offensive language, intolerance, or harassment of any kind. Respect these facilities and our time together by eliminating all distractions, especially cell phones, iPods, and other gadgets, and by refraining from disruptions of any kind, including sleeping in class or talking when no formal class discussion is taking place. Finally, respect yourself by participating fully in each class session and making the most of this learning opportunity.

Be Responsible. As a student in this college course, you are entirely responsible for your own success. You are responsible for reading and following the syllabus. It's expected that you arrive to each class session on-time, with assigned work completed, ready to participate fully. If you miss class, you are responsible for the consequences. You are also responsible for obtaining notes, assignments, and syllabus adjustments. Finally, you are responsible for being an active participant in this class rather than a passive observer.

Rise to the Challenge. College-level courses are demanding. They require deeper thinking, more effective writing, and greater personal involvement than many students realize. In order to succeed at this level, you must be willing to accept the challenges presented by the course material, your instructors, and a rigorous schedule. One of the rewards of this challenge can be the discovery that you are capable of much more than you imagined. Therefore, expect great things from yourself, work hard to achieve them, and seek help when you need it. The other members of this community of learners are here to support you, but it's up to you to *rise to the challenge*.

While I do not take attendance, class attendance is expected by college policy. **Students are responsible for all information and assignments given in class.** The easiest way to fall behind and ultimately fail a class is to be absent multiple times. Material moves quickly in this course, so even one absence can put you behind. This is even more important for block and summer schedules, where missing one class is missing a whole week of the course!

LABORATORY

Lab meets the first week! You must register for a laboratory section as well as a lecture section. Laboratory attendance is mandatory and experiments must be performed at the assigned time. If you must be absent, including for an illness, notify the instructor in advance. Make-up labs may be arranged during other scheduled lab periods **that same week** by consulting with the instructor as soon as possible. If you miss a lab, or are unable to make it up during one of the other lab periods, it will count as a ZERO. Students missing three labs will have their grade reduced by one full letter grade. Students missing four labs will have their grade reduced by two full letter grades. Students missing five or more labs will fail the course. The one lowest lab score will be dropped at the end of the semester.

Laboratory worksheets will be completed during lab and checked by the instructor but will not be turned in. Your credit for the lab (10 points each experiment) will come from online post-lab quizzes will be administered in D2L. More information will be given in lab. Prelab assignments must be completed by the beginning of the laboratory period in which the experiment will be performed. They may not be turned in late. Students will typically work in pairs. There will be no groups of three or more, unless assigned by the instructor, as a laboratory course should involve as much "hands-on" work as possible for each student.

It is crucial that you arrive to laboratory on time, as discussions will start immediately. Safety glasses and goggles will be provided for you to wear whenever chemicals are being used in the laboratory.

In addition to the points for lab reports, 20 points will be dedicated to your participation in lab. Each week you and your lab partner will subjectively evaluate the other on the following criteria:

1. On time to lab
2. Preparedness
3. Attitude
4. Team effort
5. Safety

You will have a different randomly-chosen partner each week, and your partner will not see the scores you give them. These evaluations along with my own observations as instructor will factor into your laboratory participation score, which will be given at the end of the semester.

There will also be 5 housekeeping points for the semester. Your housekeeping points may be deducted if you leave a mess behind at your lab station. These points may also be assigned for a specific cleanup task near the end of the semester.

ASSIGNMENTS AND QUIZZES

Reading assignments are given later in this syllabus. You should have each of the reading assignments completed *before* the class period where that material is covered.

A small number of **quizzes** (usually 3) will be administered during class. Tentative dates for these quizzes are given in the course calendar later in this syllabus. Quizzes are worth 15 points each. Make-up quizzes for excused absences *may* be available. See the instructor.

Textbook practice problems will also be assigned. You should plan to work on these assignments while the related topics are covered in class. Practice is **crucial** for many of the skills and concepts learned in this class. These problems will *not be collected*. You have college-level expectations in this course, so therefore I will not “hold your hand” and collect and grade daily work each period. Students should take the initiative to keep up with their work in order to prepare themselves for quizzes and exams. Additional practice worksheets for certain concepts will be posted on the course webpage.

Online homework problems in MasteringChemistry will be assigned for every chapter. These assignments will be scored electronically and are worth 5 points each. You will typically have a week to complete the assignment. MasteringChemistry access can be purchased in a bundle with your textbook in the bookstore, or separately. The one lowest online homework score will be dropped at the end of the semester. Access instructions will be emailed to your MetNet email address the first week of class. More information on these assignments will be given to you in the first week of class.

Discussion assignments will be introduced throughout the semester. These will be a series of short research, analysis, and opinion-based posts you will make to the D2L discussion boards. These will be worth from 10-30 points each (usually 2 assignments). More information on these assignments will be presented in class.

Online participation will be assessed through your informal participation on the D2L discussion boards, an online collaboration environment where you can converse with your classmates and the instructor by posting messages. I think you'll find this to be a very useful way to get clarifications or alternative explanations on difficult concepts presented in this class. The online message boards will be separated into forums for Exam 1, Exam 2, and Exam 3 material. For full credit on these participation points, ***you must contribute at least two thoughtful posts (questions or comments) in each of the exam's forums.*** Approximately 15 points will be awarded over the course of the semester for this participation. More information on this will be presented in class.

EXAMS

There will be three midterm exams (100 points each) **plus one comprehensive final exam** (150 points). Topics covered in lecture, laboratory, the reading assignments, or the problem assignments may appear on the exams. Exams must be taken at the scheduled time. **Make-up exams may be available in the case of documented school activities, illness, emergencies, or other serious situations (but not family vacations). Except in the case of documented emergencies, make-up exams are only available if you contact the instructor by email, phone, or voicemail before the exam. The make-up exam must be completed before the exams are returned to the class (1-2 class periods following the exam). Put the exam dates on your schedule now.** The instructor has the right to refuse a make-up exam. Some exams may be arranged to be taken early, see the instructor as soon as possible if you may need this option. Make-ups may be allowed for excused absences from the final exam **but only if the instructor has been consulted in advance.**

As an incentive to do well on the final exam, **your lowest midterm exam score will be replaced by your final exam percentage score (if it is an improvement).** If you miss one exam, its score will be replaced by your final exam percentage score. You should try your very best for each exam, since you never know when unplanned events may prevent you from taking a future exam. In order to pass the course, you must take at least two of the three midterm exams, and you must take the final exam.

ACCOMODATIONS

Alternative testing situations can be arranged for those students with a documented learning disability. Contact the school's disability services office for more information. Please notify the instructor well in advance of the exam if you elect for this service. *The alternative exam time may not be later than the assigned exam time.*

Every effort will be made to provide accommodations for religious observations. Please notify the instructor as far in advance as possible.

Please notify the instructor if you have any issues with loud noises, small explosions, flames, or other concerns.

EXTRA CREDIT

There may be one or two opportunities for a small amount (~10 points) of extra credit in this semester. Only those opportunities announced to the entire class will be available for extra credit, and they must be completed by the announced due dates.

ACADEMIC DISHONESTY

Cheating or plagiarism of any kind will not be tolerated. Any incidents of cheating or plagiarism will be arbitrated through the school's administration and may result in the exam, quiz, or assignment in question to be given a grade of zero, which cannot be made up. Extreme cases may result in a grade of F for the course. Care will be taken to discuss proper formats for citing sources in written projects as needed throughout the semester. Many lab reports and group projects involve sharing of data and collaboration between several students; these instances do not constitute plagiarism as long as all contributors are listed on the assignment.

STUDYING

"By failing to prepare, you are preparing to fail." -Benjamin Franklin

It is very important that you *discipline* yourself to become an organized, conscientious student who studies regularly. Set aside some time each day and devote it to studying chemistry. Last-minute cramming for cumulative exams usually results in poorer understanding of concepts and lower exam scores.

Read the assigned text **before** each chapter is covered in lecture. No matter how clearly the material is presented in lecture, you will not retain the information if that is the first time you see it. By reading the material carefully in advance, the lectures will become entirely more valuable by reinforcing and cementing your understanding of the concepts.

Work the assigned practice problems after each class by yourself, **without resorting to the answer key!** If you're stuck, re-read the relevant section of the text, come back to it later, or ask a friend, a tutor, or the instructor for a nudge in the right direction. The struggle to get a problem solved is an integral part of the learning process. Only **after** you've gotten an answer you're confident with should you check the answer key.

You should also form or join a study group as a **supplement** to your individual studying and practicing. Helping another student with a difficult problem is one of the best ways to reinforce your own learning.

Overall you should try to focus on **underlying concepts, problem solving skills**, and **common themes** more than simply memorizing facts. You should always view difficulty as a challenge to overcome.

KEEPING TRACK OF YOUR PROGRESS IN THIS COURSE

You should always, on your own, keep track of your scores for all work you do in this course. To determine where you stand in the course, divide the total of your points earned by the total number of points possible. Then multiply by 100. This will give you a percentage which you can use to determine your letter grade. All your recorded scores will appear in D2L. Check these regularly to ensure they were entered correctly.

APPROXIMATE COURSE POINTS AND LETTER GRADES

~12 Labs × 10 pts (1 lowest dropped)	~110 points
Lab participation/housekeeping	25 points
~9 Homework × 5 pts (1 lowest dropped)	~40 points
Online discussion assign./participation	~50 points
3 Quizzes × 15 pts	45 points
3 Midterm exams × 100 pts	300 points
(lowest midterm replaced by final exam % if improvement)	
Final exam × 150 pts	150 points
Total	approx. 720 points

The course grade will typically be based on a total point system with the following letter grades:

- A** 90.0 % and above
- B** 80.0 - 89.9 %
- C** 70.0 - 79.9 %
- D** 60.0 - 69.9 %
- F** below 60.0 %

No scores or grades will be curved in this class. Occasionally, the above percentages may be lowered, but will never be raised. In other words, if you earn greater than 90% of the points in the course, you are guaranteed an A. Your official course letter grade will only be calculated at the end of the semester.

Postlab Quizzes in D2L

Students in your lab section will keep your worksheets at the end of the lab period. You will then, outside of lab, take a short postlab quiz in the D2L learning environment.

- After you leave lab, you can access the postlab quiz in your **lab section's** D2L course.
- Prelab questions are due in lab at the beginning of each lab. The instructor will quickly check and return them to you with a score out of 2 points. The first question in the D2L postlab quiz asks what score you received on your prelab. Be honest on this question, as the instructor may double check these scores at any time. Any dishonest responses will cause your quiz score to be penalized or voided.
- During lab, the instructor will also initial the worksheet of students that successfully completed the experiment and the worksheet. The second question in the D2L postlab quiz asks if you completed the experiment and all questions on the worksheet. Again, answer this question honestly as your score will be penalized or voided otherwise.
- Many of the quiz questions will be very similar to the questions on your lab worksheets. It is to your benefit to work carefully with your partner on your worksheet **during lab**, as you may use the worksheet to help complete the quiz. You may also use class notes and the textbook, if you like.
- These weekly quizzes will be the sole source of points for the laboratory portion of your course. If you do not attempt the quiz, you will get no credit for that week's lab.
- You have 48 hours from the end of the lab period to submit the quiz. Late submissions will not be accepted. It is strongly recommended that you complete the quiz as soon as possible.
- You have 120 minutes from the time you begin the quiz until you submit it. Normally, it should take you less than 20 minutes to complete.
- This must be treated as a quiz, meaning you are to complete it **alone and without the assistance of any other people**. Failure to follow this rule will result in the assignment score changed to a zero. Repeat offenses will cause you to be referred to the administration and your passing of this course will be in jeopardy. If you witness other students disobeying this rule, contact the instructor immediately. Each student gets a randomly-generated set of questions, so assistance from another student will be of little help anyway.
- You will be able to see your score and responses after the quiz's due date.

CHEMISTRY 1020 READING/PROBLEM ASSIGNMENTS

Chap	Title	Reading Assignments	Suggested Problem Assignments
1	<i>The Chemical World</i>	All sections	none
2	<i>Measurement and Problem Solving</i>	All sections	#7, 11, 23, 35, 37, 39, 41, 45, 51, 55, 63, 67, 69, 73, 89, 93, 95, 97, 105, 107
3	<i>Matter and Energy</i>	3.1-3.7, 3.10	#3, 7, 11, 13, 15, 25, 31, 35, 41, 63, 97, 99
4	<i>Atoms and Electrons</i>	All sections	#5, 13, 15, 19, 21, 27, 29, 33, 49, 53, 55, 57, 61, 69, 73, 83, 87, 89, 99, 105, 107, 113
5	<i>Molecules and Compounds</i>	All sections	#1, 7, 9, 13, 19, 21, 27, 29, 37, 41, 45, 47, 53, 55, 57, 59abcde, 63abcdf, 65, 67, 71, 73, 75, 87abcd, 89
6	<i>Chemical Composition</i>	6.1-6.7	#21, 31, 37, 47, 59, 69, 71, 79, 99, 103
7	<i>Chemical Reactions</i>	7.1-7.6, 7.8-7.10	#5, 7, 11, 15, 29, 33, 35, 37, 43, 49, 51, 53, 55, 57, 59, 61, 65, 67, 69, 87, 89, 107
8	<i>Quantities in Chemical Reactions</i>	8.1-8.6	#3, 5, 9, 11, 17, 19, 25, 29, 33, 43, 47, 53, 57, 59, 63, 69
9	<i>Electrons in Atoms and the Periodic Table</i>	9.1-9.8	#1, 11, 15, 17, 21, 25, 27, 43, 49, 53, 55abd, 57, 61, 67, 69, 73, 75, 89, 91, 97, 99
10	<i>Chemical Bonding</i>	10.1-10.5, 10.7-10.8	#7, 9, 11, 25, 29, 31, 35, 39, 41, 45, 47, 49ac, 51, 53, 77, 83, 89acd, 93, 97(skip polarity), 99
18	<i>Organic Chemistry</i>	18.1-18.8, 18.11-18.12	#7, 11, 13, 15, 23, 39, 41, 45, 47, 49, 51, 57, 59, 61, 65, 89, 91
12	<i>Liquids, Solids, and Intermolecular Forces</i>	12.1-12.2, 12.4-12.8	#3, 7, 13, 17, 20, 25, 27, 33, 41, 47, 61, 63, 65, 71, 73, 77, 99
13	<i>Solutions</i>	13.1-13.7, 13.9 (no calcs from 13.9)	#3, 5, 6, 7, 8, 11, 15, 19, 25, 33, 35, 37, 45, 49, 63, 65, 73, 75, 79, 81, 83, 85, 123
14	<i>Acids and Bases</i>	TBA (as time permits)	#1, 3, 6, 9, 10, 19, 22, 23, 26, 33, 57, 61acd, 71, 73, 77, 81

Also, see the collection of practice worksheets on the course webpage,

<http://webs.anokaramsey.edu/aspaas/1020>

CHEMISTRY 1020 TENTATIVE LECTURE AND LAB SCHEDULE

Changes and updates to this schedule will be announced in class and posted at <http://webs.anokamsey.edu/aspaas>

Lab	Monday	Tuesday	Wednesday	Thursday	Friday
Intro / Safety	Jan 12 Intro / Ch 1	Jan 13	Jan 14 Ch 2	Jan 15	Jan 16
Questions and Review (optional)	Jan 19 No Classes MLK Day	Jan 20	Jan 21 Ch 2	Jan 22	Jan 23
Exp 1 Does It Make Cents?	Jan 26 Ch 2/3	Jan 27	Jan 28 Ch 3/4	Jan 29	Jan 30
Exp 2 How Do You Measure Up?	Feb 2 Ch 4	Feb 3	Feb 4 Ch 5	Feb 5	Feb 6
Exp 6 TLC	Feb 9 Ch 5	Feb 10	Feb 11 Ch 5	Feb 12	Feb 13
Questions and Review (optional)	Feb 16 No Classes President's Day	Feb 17	Feb 18 EXAM 1 Ch 1-5	Feb 19	Feb 20
Exp 9 It's A Gas!	Feb 23 Ch 5	Feb 24	Feb 25 Ch 6	Feb 26	Feb 27 No Classes Duty Day
Exp 14 It's Snow Big Deal	Mar 2 Ch 6	Mar 3	Mar 4 Ch 7	Mar 5	Mar 6
Exp 8 What's In A Cent?	Mar 9 Ch 7	Mar 10	Mar 11 Ch 8	Mar 12	Mar 13
No Labs Spring Break	Mar 16 No Classes Spring Break	Mar 17 No Classes Spring Break	Mar 18 No Classes Spring Break	Mar 19 No Classes Spring Break	Mar 20 No Classes Spring Break
Exp 4 Which Solution Is Which?	Mar 23 Ch 9	Mar 24	Mar 25 Ch 9	Mar 26	Mar 27
Questions and Review (optional)	Mar 30 Ch 9	Mar 31	Apr 1 EXAM 2 Ch 5-9	Apr 2	Apr 3
Exp 5 Molecular Models	Apr 6 Ch 10	Apr 7	Apr 8 Ch 10	Apr 9	Apr 10
Exp 15 Soaps	Apr 13 Ch 18	Apr 14	Apr 15 Ch 18	Apr 16	Apr 17
Exp 16 The Solution Is Dilution	Apr 20 Ch 12	Apr 21	Apr 22 Ch 12	Apr 23 Last Day to Withdraw	Apr 24
Questions and Review (optional)	Apr 27 Ch 13	Apr 28	Apr 29 Ch 13	Apr 30	May 1
Exp 10 Antacids	May 4 EXAM 3 Ch 10, 18, 12, 13	May 5	May 6 Ch 14	May 7	May 8
Review / Cleanup	May 11 Ch 14	May 12	May 13 FINAL EXAM 10:00 am - noon	May 14	May 15