

Chemistry 60-Omrčen-Spring2020 Syllabus

“We learn more by looking for the answer to a question and not finding it than we do from learning the answer itself.”

~Lloyd Alexander~

This syllabus is an agreement; your continued registration in this course means that you understand and agree to the policies outlined here. Please refer to this document regularly.

Instructor: Dr. Tatjana Omrčen (pronounced *Tatiana Omerchen*). You can call me Tatjana, “doctor Omrcen” or “professor Omrcen”

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Office hours: W 8:00-9:00am, MW 3:00-4:00pm, TuTh 1:30-2:30pm

You do not need to make an appointment to see me during scheduled office hours -these are the times when I am in my office specifically to meet with my students. If none of these hours work with your schedule, talk to me so we can find the time that works.

When you e-mail me, generally you can expect to get an e-mail response from me within 24 hours during the week, maybe longer on the weekend. To help me respond quickly, please make your e-mails brief, clear and specific, and always include your full name and the section number.

Required Course Material

Course textbook: Suchocki, John. *Conceptual Chemistry, 5th ed.* Prentice Hall, 2014.

Access code to Pearson’s “Mastering Chemistry” online homework resources. If you purchased a new textbook at the SRJC bookstore, it contains the free access code. Follow the link

<http://www.masteringchemistry.com/> to register. If you have a used textbook, you can purchase the MasteringChemistry access code via the same link. After clicking on “Student” under “Register” indicate “you do not have an access code” and follow the prompts. When asked “Tell us which book you are using?” be sure to select Suchocki, John. *Conceptual Chemistry, 5th ed.* Prentice Hall, 2014 from the choices provided. IMPORTANT note for all students: At some point in the registration process you will be asked to enter the course ID. For this class, the code is CHEM60S20OMRČEN. On this web site you will also have an option to purchase an e-book if you wish, as an alternative to the paper textbook.

Laboratory manual Omrčen, Tatjana (2019). *Chemistry 60 Laboratory Manual, 10th ed.* Arbor Crest Publishing. Do not plan on using any older editions of this manual.

A bound notebook (aka “composition” book) to keep the running record of your laboratory work.

There is no need to buy an expensive “Laboratory Notebook” sold in SRJC bookstore.

i>clicker remote. i>clicker is a response system that allows you to respond to questions I pose during class and is also required for chapter quizzes. In this course, you have the option of using an i>clicker, i>clicker+ or i>clicker2 remote. If you already have any of the above i>clicker remotes from a previous class, you are all set, and you will be able to register the device in class.

A simple scientific calculator. Graphing calculators are acceptable, but not necessary in this class.

Please be aware that cell phone calculators or sharing of calculators are not allowed on tests.

Protective eyewear and apron You should purchase them at the SRJC bookstore.

Student Learning Outcomes

Upon successful completion of the course students will be able to:

1. recognize and apply the underlying chemical foundations of medicine and life.
2. correlate microscopic and macroscopic behavior of matter.
3. solve quantitative problems relating to chemical principles.
4. safely use basic equipment to observe and measure chemical and physical properties in the laboratory.

Course Description

Chemistry 60 course is designed for students who are interested in pursuing careers in nursing and other health professions, and who have little or no background in chemistry. The most fundamental concepts and techniques of chemistry will be presented by emphasizing the applications of chemistry in our lives and the impact of chemistry on society and the environment. The course satisfies the requirements of nursing and related majors that require one semester of chemistry. Students who plan on taking Chemistry 1A should enroll in Chemistry 42, rather than Chemistry 60.

Course Goals and Objectives

An obvious goal of this course is for you to learn the fundamental concepts of general, organic and biological chemistry. But, by signing up for this class, you have embarked on a wonderful journey of discovery. Contrary to what you may have heard, studying science is much more than memorizing facts, rules and definitions. The approach in this class is to ask you lots of questions and, based on your answers, provide feedback, more questions – and some answers! A typical class period will consist of lectures, clicker questions, partner/group activities and writing tasks. This format requires you to be an active and responsible participant in the classroom; it is not going to be enough to just show up for class hoping to be handed everything you need to know. What you get from this course depends on you. If you embrace the process, do all the assigned work and keep up with the material, you can expect to succeed. If not, you will find that the material quickly becomes incomprehensible.

At the end of this course, you should have better appreciation of how scientists think, the beauty of chemistry and its importance in other fields and in everyday situations. It is my hope that you will improve your time management skills and study habits, learn how to evaluate the available information, formulate good questions, recognize what is being asked, and conceptualize how to solve problems. The improved thinking skills that will enable you to apply your knowledge to new situations. If you are successful in achieving these goals, what you learn in this course will serve you well in many realms –future courses, potential careers, and the many areas of everyday life where good analytical thinking can go a long way. Einstein said: “An education is what remains after you have forgotten everything you learned in school.” I’m pretty sure that, when saying “education” he was referring to thinking skills, which will remain with you long after you have forgotten many of the subject-specific facts.

Classroom Etiquette

This is a very interactive class. Please come to class with positive attitude and a genuine desire to learn and be prepared to actively participate in class discussions. I will make every effort to learn every student’s name, but I am more likely to be successful if you make an effort that will help me notice you. You should strive to always turn in the highest quality work of which you are capable.

Please be punctual when arriving to class. If you happen to be late, enter quietly. If you must leave early, sit where you can leave with minimal disruption. If you have any uncontrollable scheduling issues that may cause you to be regularly late for lecture (such as child care), please come and talk to me at the beginning of the semester so that I am aware. For the safety reasons, you will not be able to participate in lab if you miss or arrive late for the pre-lab lecture, if you did not complete the assigned pre-lab activities or if you otherwise demonstrate the lack of sufficient preparation.

Do not carry out unrelated side conversation with your neighbors when one person is speaking. These conversations are distracting and disrespectful to your fellow classmates and to me and make it difficult to hear and focus.

Please do not eat in class. Bottled water is okay.

I ask you to not use either computer or tablet for note taking, or take voice or video recordings of the lectures, unless you submit documentation from DRD indicating that you need a specific tool due to disability. In that case, make sure to come and talk to me as soon as possible.

A few other general comments about the use of cell phones, tablets, and computers in class

Often a question will come up in class discussion to which we may not know the immediate answer. Internet at our fingertips can be of great help. Your use of phone or other wireless devices for in-class research is allowed when the specific need arises. Otherwise, please keep the devices out of sight (yours and mine) and turn off the sound.

Course Requirements and Grading Policy

To keep track of your own grade throughout the semester refer to this policy regularly.

The final course grade will be determined based on the percentage of points earned in all the individual grade components and their weighting factors, as summarized in the table. The specific requirements for each category are explained below. Borderline cases will be decided after taking into consideration such factors as academic growth, initiative, attendance, punctuality, attitude, and individual motivation. Grades will not be based on a curve. Everyone can do well in the course. You are encouraged to help each other **learn** chemistry but be careful not to confuse “helping each other learn” with cheating.

Lesson preparation and in-class participation	5%
Chapter homework	5%
Semester exams	40%
Lab (participation and reports)	15%
Lab exam	15%
Final exam	20%
Total	100%

Approximate grade cutoffs: **A** $\geq 88\%$ **B** $\geq 76\%$ **C** $\geq 64\%$ **D** $\geq 52\%$ **F** $< 52\%$

LESSON PREPARATION AND IN-CLASS PARTICIPATION

How should you prepare for class?

- Read in your textbook (or e-text) the material we will cover each day.
- As you are reading, specifically identify anything you don't understand, write the questions down and bring them to class.

Your participation in class will be determined by these criteria:

- Completing, and submitting by the assigned deadline, any miscellaneous assignments other than chapter homework (which is a separate grade category).
- Chapter quizzes
- Active involvement in partner/group activities; completing in-class assignments; asking meaningful questions.
- Regular attendance: attendance is crucial to your success in this class. Two missed classes will be excused. Each three subsequent absences will reduce your participation grade by 1 percentage point. Arrivals after 5 min of class time are considered late (3 late arrivals = 1 absence).

CHAPTER HOMEWORK

Online homework will be assigned on a regular basis to help you prepare for classroom discussion, to monitor your learning and to keep you from falling behind. I recommend that you start these assignments as soon as they are posted and use them to practice as you follow the lectures. Any work submitted after the deadline will not be graded, but you are still encouraged to complete it as a valuable practice for upcoming exams.

SEMESTER EXAMS

There will be three semester exams that will be based on all the reading, classroom work, laboratory activities, and homework assignments scheduled up to that date. There will be no make-up exams. If you have to miss an exam, your final exam score will be used in its place. If you do not miss any exams, a superior score on the final exam will be used to replace **one** lowest score of the semester exams.

LABORATORY

Your lab grade will be based on the following:

- Completing and submitting on time all the required written and/or online pre-lab work. These will vary for each experiment and may also include occasional short lab quizzes, to confirm that you completed all the required reading and pre-lab activities for the scheduled experiment. You will not be able to perform an experiment if you did not complete the required pre-lab work, miss a pre-lab quiz or are late for pre-lab lecture. In that case you will receive “zero” for that experiment.
- In-lab performance, with the emphasis on your active involvement, curiosity, teamwork, and consideration for lab safety and equipment.
- Turning in on time the lab report for each experiment that reflects full intellectual involvement with the experiment. Incomplete/unreadable/late reports will not be graded and you will receive “zero” for the experiment, regardless of the actual lab work performed.
- Lab exam

Your active presence in the laboratory is mandatory. You will not be able to participate if you arrive late for pre-lab lecture or show signs of being unprepared. There will be no make-up labs. I will make a grade adjustment to account for **one** missed lab. Prolonged illness, or other reasons out of your control for missing more than a single lab, will be handled on an individual basis. In that case, please talk to me as soon as possible so we can figure out what options exist. Otherwise, if you miss more than two labs you could be dropped from the course for lack of participation.

FINAL EXAM

Final exam will be a comprehensive, multiple-choice exam of all the subject matter covered in the course. There will be no make-up exam. Make sure you talk to me as soon as possible, if you anticipate any scheduling conflicts.

The superior score on the final exam may be used to replace **one** low score of the semester exams. Those students who earned at least a “B” or better ($\geq 76\%$) on each of the semester exams, who scored $\geq 76\%$ semester average on the online homework assignments, who did not miss any labs, scored $\geq 76\%$ semester average lab grade and $\geq 76\%$ on the lab exam, may opt out of taking the final exam. In that case, the average score of the semester exams will also be used as the final exam grade for the purposes of calculating the course grade. You will still need to meet with me during the finals week for a grade review. Details of this meeting will be explained to you in class.

You will not be able to receive a C or better in the course, without receiving **both** $\geq 52\%$ overall point average on the lab component of the course, as well as $\geq 52\%$ overall point average on the semester exams and the final.

A general note regarding grades

Please remember that instructors do not *give* the grades. The grade you ultimately *earn* in this class will reflect the depth of your own learning as described below. Please use the grade description regularly as you self-evaluate your progress in the class.

The "**A**" **grade** indicates that the student exhibits **mastery** of the details, concepts, vocabulary, and operations of the subject matter. The student displays the potential for significant achievement at the professional level.

The "**B**" **grade** indicates that the student exhibits an **understanding** of the details, concepts, vocabulary, and operations of the subject matter. The student displays the determination and commitment in the pursuit of mastery of the subject.

The "**C**" **grade** indicates that the student exhibits an **awareness** of the details and vocabulary of the subject matter, and the capability of performing the **basic operations**, and possesses an **elementary knowledge** of the principal concepts.

The "**D**" **grade** indicates that the student has **awareness** of the details and vocabulary of the subject matter but **lacks the capability** of performing the basic operations or of understanding the basic concepts. This student can be considered to be at the entry level of the class and would benefit by repeating the course.

The "**F**" **grade** indicates that the student, due to one or more of the following factors, received no obvious benefit from participation in the class.

Failure to take or pass required examinations

Continued lack of preparation

Distracting or disruptive behavior in class

Disregard of instructions

Failure to submit required assignments

Excessive absences

Re-evaluation of Graded Work

Occasionally I will make a mistake while grading. Often it is a calculation or some other technical error, but sometimes the mistake will be in my interpretation of your answer. I am always more than happy to fix such mistakes. Please observe the following procedure in submitting the graded work for re-evaluation. After your graded assignment is returned to you, do not write on it if you plan to submit it for a "re-grade." All "re-grades" must be submitted within one week of the day the graded assignments were returned, with a written note explaining what is to be re-graded and why. The note can be very short, e.g. "points added incorrectly," or longer if there is a more complicated point to be explained. Based on the rationale submitted, the entire report/exam will be reevaluated. Please be sensible: do not submit a re-grade request before the answer key is posted and, unless it is a technical error, please do not seek 1 or 2-point changes. This is within the error of any process requiring thought and is accounted for when the final grades are rounded off.

Standards of Conduct and Academic Integrity

SRJC Academic Integrity Statement

Santa Rosa Junior College holds that its primary function is the development of intellectual curiosity, integrity, and accomplishment in an atmosphere that upholds the principles of academic freedom. All members of the academic community — student, faculty, staff, and administrator — must assume responsibility for providing an environment of the highest standards, characterized by a spirit of academic honesty and mutual respect. Because personal accountability is inherent in an academic community, this institution will not tolerate or ignore any form of academic dishonesty.

You are expected to complete all assignments and examinations with total honesty. I will take very seriously any incidents that violate the academic integrity policy. Some obvious examples of cheating include: copying during an exam or quiz, aiding another student's dishonesty, etc. In many ways the activities forbidden and called cheating in school (at all levels) are different from those that are forbidden in the workplace. For example, collaboration on projects is encouraged in the workplace, but

usually forbidden in school. In this course, collaboration between students is strongly encouraged, so that you can learn and practice the skills you will need in the workplace. However, written assignments must be composed in your own words, even if the answers resulted from a group discussion, in order to demonstrate **your understanding** of the concepts. Thus, turning in identical problem sets will be treated as cheating. This sometimes creates confusion about what is cheating. If, after reading this paragraph, you are still unsure about whether a particular activity is permitted, please talk to me. At the minimum, students found cheating will earn zero on the assignment in question, and may be subject to a two-day suspension, in accordance with the SRJC Policy.

Emergency Evacuation Plan

In the event of an emergency during class that requires evacuation of the building, please leave the class immediately, but calmly. Our class will reassemble on the lawn between Bech, Shuhaw and Baker Halls, to make sure everyone got out of the building safely and to receive further instructions. If you are a student with a disability who may need assistance in an evacuation, please see me during my office hours as soon as possible so we can discuss an evacuation plan.

Accommodations for Students with Disabilities

If you need disability related accommodations for this class, such as a note taker, test taking services, special furniture, etc., please provide the Authorization for Academic Accommodations (AAA letter) from the Disability Resources Department (DRD) to the instructor as soon as possible. You may also speak with the instructor privately during office hours about your accommodations. If you have not received authorization from DRD, it is recommended that you contact them directly. DRD is located in the Bertolini Student Center (3rd Floor) on the Santa Rosa campus, and 101 Jacobs Hall on the Petaluma Campus.

CHEM60-S20-Omrcen: Tentative Schedule, all sections

WK	Day	Date	In Class	In Lab This Week
1	M	1/13	Course Intro	Intro to lab
	T	1/14		
	W	1/15	Chapter 1	
	Th	1/16		
	Su	1/19	Last Day to register without instructor's add code	
2	M	1/20	NO CLASSES Martin Luther King Day Holiday	
	T	1/21	NO CLASSES; PDA	
	W	1/22	Chapter 2	Lab TBA
	Th	1/23		
3	M	1/27	Chapter 2	EXP1: Measurements
	T	1/28		
	W	1/29	Chapter 2	
	Th	1/30		
	Su	2/2	Last day to add with instructor's approval; Last day to drop without a "W"	
4	M	2/3	Chapter 3	EXP2: Separating a Heterogeneous Mixture
	T	2/4		
	W	2/5	Chapter 3	
	Th	2/6		
5	M	2/10	Chapter 3	EXP3: Identifying a Pure Substance (Mon and Tue Lab Sections)
	T	2/11		
	W	2/12	Exam 1 (Ch 1-3)	no lab
	Th	2/13	NO CLASSES; PDA	
6	M	2/17	NO CLASSES Washington's Day Holiday	
	T	2/18	Exam 1 (Ch 1-3)	no lab
	W	2/19	Chapter 4	EXP3: Identifying a Pure Substance (Wed and Thur Lab Sections)
	Th	2/20		
	Su	2/23	Last Day to opt for P/NP	
7	M	2/24	Chapter 4	EXP4: TLC of Vegetable Pigment
	T	2/25		
	W	2/26	Chapter 5/Chapter 6	
	Th	2/27		
8	M	3/2	Chapter 6	EXP5: Ionic and Molecular Compounds
	T	3/3		
	W	3/4	Chapter 6	
	Th	3/5		
9	M	3/9	Chapter 12 (Sections 12.1-12.2)	EXP6: How Much Energy is in my Food
	T	3/10		
	W	3/11	EXAM 2 (Ch 4, 5, 6, 12.1, 12.2)	
Th	3/12			
3/16-3/22 Spring Break				

WK	Day	Date	In Class	In Lab This Week
10	M	3/23	Chapter 7	EXP9: Determining Solution Concentration by Evaporation
	T	3/24		
	W	3/25	Chapter 7	
	Th	3/26		
11	M	3/30	Chapter 7	EXP10: How Much Sugar is in my Drink?
	T	3/31	Chapter 8	
	W	4/1		
	Th	4/2		
12	M	4/6	Chapter 8	EXP7: Observing and Describing Chemical Reactions
	T	4/7	Chapter 9	
	W	4/8		
	Th	4/9		
13	M	4/13	Chapter 9	EXP11: Extraction of Caffeine from Tea
	T	4/14	EXAM 3 (Ch 7, 8, 9)	
	W	4/15		
	Th	4/16		
	Su	4/19	Last day to drop with a "W"	
14	M	4/20	Chapter 10	EXP12: Acids, Bases and Buffers
	T	4/21	Chapter 10	
	W	4/22		
	Th	4/23		
15	M	4/27	Chapter 12	Lab Exam
	T	4/28	Chapter 12	
	W	4/29		
	Th	4/30		
16	M	5/4	Chapter 13	Dry Lab2: Label Reading
	T	5/5	Chapter 13	
	W	5/6		
	Th	5/7		
17	M	5/11	EXAM 4 (Ch 10, 12, 13)	Lab TBA
	T	5/12		
	W	5/13	Semester wrap; final exam review	
	Th	5/14		
18	W	5/20	7:00am-9:45pm FINAL EXAM for sections 5362 and 5406	
	Th	5/21	10:00am-12:45pm FINAL EXAM for sections 4346 and 4347	