

Chemistry 1B (2498/6050) Course Syllabus General Chemistry Fall 2018

Instructor: Dr. Bindu Meprathu E-Mail: bmeprathu@santarosa.edu
Office: Bech Hall 1970 Phone: 707-527-4999 x9712.
<https://profiles.santarosa.edu/bindu-meprathu>

Office Hours : Tue/Thurs 8:45am-9:00am , 1:30- 2:10pm

Lecture (2498/6050)	Tue/Thurs	12:00pm-1:30pm	1901 Bech Hall
Lab (2498)	Tue/Thurs	9:00am-12:00pm	1960 Bech Hall
Lab (6050) Dr. Branca	Tue/Thurs	3:00pm-6:00pm	1960 Bech Hall

This syllabus is to be considered as an agreement. Continued registration in this course means that you agree to the policies and procedures outlined in this syllabus. This syllabus is intended to give the student guidance in what may be covered during the semester and will be followed as closely as possible. However, the instructor reserves the right to modify, supplement and make changes as the course needs arise.

Course Description: A continuation of Chemistry 1A. Topics include colligative properties of solutions, chemical kinetics, thermodynamics, chemical equilibrium, nuclear chemistry, electrochemistry, coordination compounds and bonding, and selective topics in descriptive chemistry. Laboratory emphasizes methods of analytical chemistry and quantitative work. Graded only.

Pre-requisite: Completion of Chem 1A or equivalent course with a passing grade of C or higher.

Student Learning Outcomes: After successful completion of this course, a student will be able to: 1. Analyze and solve chemical systems using quantitative models. 2. Relate the concepts of chemical equilibrium and free energy. 3. Apply the principles of quantitative analysis in a laboratory setting. 4. Analyze unknown samples using advanced instrumentation. 5. Write comprehensive laboratory reports to effectively analyze data and communicate results and conclusions. The Complete Course Outline can be found through the SRJC Schedule of Classes:

https://portal.santarosa.edu/SRWeb/SR_ScheduleOfClasses.aspx

Required materials:

- 1) Textbook – Silberberg, M. and Amateis, P., *Chemistry: The Molecular Nature of Matter and Change, 8th Edition*. (ISBN: 9781260201680). Textbook may be purchased at the SRJC Bookstore or other source that is cheaper.
- 2) Lab manual – Chemistry 1B Laboratory Manual. Santa Rosa Junior College (Spring 2019).
- 3) Bound, self-copying laboratory notebook.
- 4) Scientific (TI 30X or similar) or graphing (TI 89 or similar) calculator . No programmable, stylus operated, wireless or web enabled devices, including cell phone calculators may be used during exams.
- 5) Safety goggles and laboratory apron. These can be obtained from the stockroom during the first two weeks of lab.
- 6) USB flash drive (for laboratory work).

Grading:

Your semester grade is based on three unit exams, laboratory reports, in-class quizzes, seminars and the final exam.

Unit exams	450 points
Final exam	125 points
Labs	250 points
Quizzes	50 points
Homework	75 points
Seminar	<u>50 points</u>
Maximum Possible	1000 points

Lab: 25% Exams: 57.5% Quizzes: 5% Homework: 7.5% Seminar: 5%.

Homework will be assigned on CONNECT (<http://connect.mheducation.com/class/b-meprathu-s19-chem1b-section-4298>) and due dates vary. It is the student's responsibility to check on due date and submit homework in a timely fashion. Please use this link to register if you belong to section **4298**: <http://connect.mheducation.com/class/b-meprathu-s19-chem1b-section-4298>. Use this link to register if you belong to section **6050**: <http://connect.mheducation.com/class/b-meprathu-s19-chem1b-section-6050-1>.

There will be **three midterm exams** (worth 15% each) plus a **final exam** (12.5%). Quizzes will be given in class and will not be announced in advance. Each of the three unit exams will be based on materials covered in classroom, laboratory work and other assigned work. Final exam will be comprehensive, multiple choice exam including all topics covered during the semester with slight emphasis on materials covered after exam 3. The lab score is based on the quality of results and technique as well as the quality and completeness of **laboratory reports**. Due dates and formats for lab reports will vary; the specific requirements for each report will be explained throughout the semester. A schedule of lab activities and tentative exam dates is provided at the end of this syllabus. Note: You must pass the lab **and** lecture in order to pass the course.

Grades are neither bestowed upon students by instructors, nor are they an entitlement, but are entirely *earned* by students. Realize that both objective factors (such as exam scores and problem/homework scores to which numerical values can be assigned) and subjective factors (such as effort, improvement, initiative, honesty, participation, academic growth, etc., which cannot be easily tagged with a number) will be taken into account at the end of the semester when letter grade assignments are made.

Borderline cases will be decided after taking into consideration such factors as: *academic growth, classroom participation, initiative, attendance, punctuality, positive attitude and personal initiative*.

Approximate Scale for Letter Grades

A (88-100%) B (77 – 87%) C (66 – 76%) D (56 – 65%) F (Below 56%)

Attendance:

Class attendance is a critical component of the learning process. A large amount of material will be covered in class and you are putting yourself at a disadvantage by missing class. In each class, understanding new concepts is dependent on your grasp of material covered in previous classes. Since the laboratory is very important to this course, missing more than three labs, unexcused, will result in a grade of F. Excused absences require documentation of a serious and compelling reason, for example a doctor's note. **Students missing more than 10% of the lecture and laboratory hours may be dropped from class per district attendance policy.**

<http://www.boarddocs.com/ca/santarosa/Board.nsf/goto?open&id=A83PZ466E31A>

Late work: Quizzes and exams will generally not be given late. ONE lab report will be accepted late with a penalty of 20% per school day (Saturday and Sunday excluded).

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 Letter from the Disability Resources Department (DRD) to me as soon as possible. Please fill out any paperwork necessary for testing accommodations in advance of the exam, and keep me informed of what you need. If you have not received authorization from DRD, contact the office directly. It is located in the DRD Bertolini Student Center East Wing (527-4278).

Course Content and Format

This course will cover 8 chapters from the textbook and 20 laboratory experiments and activities. Lecture material will be coupled with practical laboratory experience to develop the ability to analyze and communicate scientific concepts and data in both qualitative and quantitative manners. Each week will involve reviewing chapter materials, preparing for laboratory and writing laboratory reports.

Make-up Policy

There will be no early or late exams. All exams will be given at the scheduled time and make-up exams are not possible. Missed exams due to medical and family emergencies will be addressed on an individual basis; however, **valid documentation must be provided**. There are no make-up labs.

Classroom Policies

All students are expected to know the Student Conduct Code (http://www.santarosa.edu/for_students/rules-regulations/scs/section1.shtml) and adhere to it in this class. Inappropriate behavior in the classroom will result in a referral to the Vice President of Student Services for disciplinary due process. Each student is expected to be considerate and polite to fellow students and instructor. Please turn off all potentially disruptive electronic devices before start of class.

Academic Integrity

Students are expected to complete all assignments, lab reports and examinations with total honesty. Although working together on these assignments is encouraged, each student must do his/her own work and use his/her own words. **Copying another student's work or laboratory assignments is considered cheating and both students will receive a ZERO for the assignment.** Students who violate the district standards of academic honesty by engaging in cheating, plagiarism, impersonation, mis-representation of facts or committing other acts of dishonesty will be dismissed and a grade of "F"

will be assigned, regardless of their level of performance up to that point in the semester.

Please read the college policy/procedure on academic integrity at:

<http://www.boarddocs.com/ca/santarosa/Board.nsf/goto?open&id=A63TMC78051C>

Drops, Withdrawals, and Incompletes

Please be aware, it is the students' responsibility to drop any course that they do not intend to complete and accept a grade. Last date to drop this course without a 'W' is 2/3/2019, last day to drop with 'W' is 4/21/2019. The instructor may drop any student enrolled in a course that is not present or has not made prior arrangements with the instructor by the second class roll call. Incompletes will only be assigned to students with medical or family emergencies, which will not allow the completion of the course. Incompletes will be addressed on an individual basis. The student must have a passing grade at the time of requesting an incomplete.

Tentative Schedule Chem 1B section 4268/6050

Wk	Day	Date	Lecture Topics	Lab This Week	Due Date
1	M	1/14/2019			
	T	1/15/2019	Intro/Ch13: Props. Of Mixt.	Safety Training. Locker check.	1/15
	Th	1/17/2019	Ch13:Properties of Mixt	Excel Training	1/17
	Su	1/20/2019	Last day to register w/o instructor's add code		
2	M	1/21/2019	Martin Luther King Holiday		
	T	1/22/2019	PDA. No classes or labs		
	W	1/23/2019			
	Th	1/24/2019	Ch13:Properties of Mixt	Graphics, Statistics, Lab Reports	
3	M	1/28/2019			
	T	1/29/2019	Ch13:Properties of Mixt/Ch16	1-Freezing Point Depression	2/5
	W	1/30/2019			
	Th	1/31/2019	Ch16: Kinetics	2-Kinetics of Crystal Violet Reaction	2/7
	Su	2/3/2019	Last day to add w/instructor's add code; Last day to drop without a "W"		
4	M	2/4/2019	First Census Day		
	M	2/4/2019			
	T	2/5/2019	Ch16: Kinetics	3-Iodine Clock (I)	
	W	2/6/2019			
	Th	2/7/2019	Ch16: Kinetics	3-Iodine Clock (II)	2/12
5	M	2/11/2019			
	T	2/12/2019	Ch17: Equilibrium	4-K of Esterification Reaction (I)	
	W	2/13/2019			
	Th	2/14/2019	PDA Day (no classes or labs)		
	F	2/15/2019	Lincoln's Day Holiday		
6	M	2/18/2019	Washington's Day Holiday		
	T	2/19/2019	Ch17: Equilibrium	Library Activity	
	W	2/20/2019			

	Th	2/21/2019	Ch17: Equilibrium	4-K of Esterification Reaction (II)	2/28
	Su	2/24/2019	Last day to opt for P/NP		
7	M	2/25/2019			
	T	2/26/2019	Exam1 (ch13, 16, 17)	5-IR Spectroscopy	3/5
	W	2/27/2019			
	Th	2/28/2019	Ch18: Acid-Base Equilibrium	6-Ksp of Cu(IO ₃) ₂ (I)	
8	M	3/4/2019			
	T	3/5/2019	Ch18: Acid-Base Equilibrium	6-Ksp of Cu(IO ₃) ₂ (II)	3/12
	W	3/6/2019			
	Th	3/7/2019	Ch18: Acid-Base Equilibrium	7-Study of Titration Curves	3/12
9	M	3/11/2019	Midterm progress indicators posted in student portal		
	T	3/12/2019	Ch19: Ionic Equilibrium	8-pKa of Bromothymol Blue	3/26
	W	3/13/2019			
	Th	3/14/2019	Ch19: Ionic Equilibrium	9-Study of Buffers	3/14
3/18 to 3/24			No Classes-SPRING BREAK		
10	M	3/25/2019			
	T	3/26/2019	Ch19: Ionic Equilibrium	10-Analysis of a Mixture of CO ₃ ²⁻ and HCO ₃ ⁻	4/2
	W	3/27/2019			
	Th	3/28/2019	Ch19: Ionic Equilibrium	11-Ethanol in Beverages by GC	4/4
11	M	4/1/2019			
	T	4/2/2019	Exam2 (Ch18, 19)	CHEMISTS AT WORK	4/9
	W	4/3/2019			
	Th	4/4/2019	Ch20: Thermodynamics	16-HPLC Computer Simulation	4/4
12	M	4/8/2019			
	T	4/9/2019	Ch20: Thermodynamics	12-Temperature Dependence of VP of Water	4/16
	W	4/10/2019			
	Th	4/11/2019	Ch21: Electrochemistry	13-Electrochemical Cells	4/18
13	M	4/15/2019			
	T	4/16/2019	Ch21: Electrochemistry	14-Study of Electrolysis	4/23
	W	4/17/2019			
	Th	4/18/2019	Ch21: Electrochemistry	15-Supercritical Liquids and GC-MS	4/25
	Su	4/21/2019	Last day to drop with a "W"		
14	M	4/22/2019			
	T	4/23/2019	Ch23: Coordination Compounds	CHEM1B Seminar	
	W	4/24/2019			
	Th	4/25/2019	Ch23: Coordination Compounds	CHEM1B Seminar	
15	M	4/29/2019			

	T	4/30/2019	Ch23: Coordination Compounds	18-Coordination Chemsitry (I)	5/9
	W	5/1/2019			
	Th	5/2/2019	Exam3 (Ch20, 21, 23)	18-Coordination Chemsitry (II)	5/9
16	M	5/6/2019			
	T	5/7/2019	Ch24: Nuclear Chemistry	18-Coordination Chemsitry (III)	5/9
	W	5/8/2019			
	Th	5/9/2019	Ch24: Nuclear Chemistry	19- Nuclear Chemistry (I)	5/14
17	M	5/13/2019			
	T	5/14/2019	Ch24: Nuclear Chemistry	19 - Nuclear Chemistry (II)	5/14
	W	5/15/2019			
	Th	5/16/2019	Review	Check-out	
18	M	5/20/2019			
	Th	5/23/2019	Final 7am to 9:45am		
	F	5/24/2019			
	Sat	5/25/2019	Commencement Exercises		