CHEMISTRY 1B – General Chemistry II (Sections #6050, 8557)
Santa Rosa Junior College – Spring 2018

Instructor: John C. Branca, Ph.D.
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Office hours: Tuesday, Thursday 3:30 – 4:30 PM

Course Information:

Lecture: All sections: Bech 1999. Tuesday and Thursday, 4:30 – 6:00 PM.

Laboratory: Section 6050: Bech 1960. TTh, 12:00 – 3:00 PM. (Instructor: J. Crowley)
Section 8557: Bech 1960. TTh, 6:30 – 9:30 PM. (Instructor: J. Branca)

The course material (from the Course Outline of Record):

Description:
A continuation of Chemistry 1A. Topics include 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.

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_CourseOutlines.aspx?Semester=20177&CVID=25540

Required material:
1) Textbook – Silberberg, M. and Amateis, P., *Chemistry: The Molecular Nature of Matter and Change, 8th Edition.* (ISBN: 9781260201680)
2) Lab manual – *Chemistry 1B Laboratory Manual*. Santa Rosa Junior College (Fall 2017).
3) Study Guide: Crowley, J. P., *Chemistry 1B Survivor Guide.* First Edition (2017).
4) Bound, self-copying laboratory notebook.
5) Scientific calculator. Must be able to do logs and square roots.
6) Safety goggles and laboratory apron. These can be obtained from the stockroom during the first two weeks of lab, or bring your set from Chemistry 1A lab to receive a fee refund to your student account.
7) USB flash drive (for laboratory work).

Grading and Assignments:

Lab:	25%
Exams (including the final):	65%
Quizzes:	10%

Homework from the textbook and study guide will be assigned regularly but not collected for points. Frequent in-class **quizzes** will account for 10% of the overall grade. There will be three **midterm exams** (worth 15% each) plus a **final exam** (20%). 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 will be provided.

Grading scale (I reserve the right to lower the grade cut-off points as appropriate.):

A – 89-100% B – 78-89% C – 67-78% D – 56-67% F – <56%.

Note: You **must** pass the lab and lecture to pass the course. In other words, if you get less than 56% of the possible points in lab ***or*** in lecture, you will receive an F in the course.

Attendance:

Attendance is required. Since the laboratory is very important to this course, missing more than three labs, unexcused, will result in a course grade of F.

Excused absences require documentation of a serious and compelling reason, for example, a doctor's note. If you miss one exam due to an excused absence, that exam score will be replaced by the average of your other two exam scores. If you miss a lab due to an excused absence, the number of points for that lab will be subtracted from the number of points possible, so that you will not be penalized. This applies to no more than two lab days. I reserve the right to drop any students from the roster (or the wait-list) if they are absent more than 10% of class time without contacting me.

Late work:

Quizzes and exams will generally not be given late. Lab reports 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 Bertolini Student Center (527-4278). I will accommodate as required with an Authorization for Academic Accommodations Letter from the Disability Resources Department (DRD) only.

Academic Dishonesty:

The first time a student is caught cheating, that student will receive a score of zero for the assignment, and a report will be filed with the administration. If a second instance of cheating occurs, the student will receive an F in the course, and a second report will be filed. "Cheating" entails any use of unauthorized aid: copying another student's answers on an exam, using another student's laboratory data without permission, using unapproved information that is programmed into a calculator or cell phone, etc. Even though we will do many experiments with partners, the written work that you turn in must be your own (unless you've been specifically asked to turn in a group report). If you're not sure, ask for approval in advance.

Portable Electronic Devices Policy: Unless previously approved by the instructor, the use of all types of portable electronic devices is prohibited during lecture and during exams. No exceptions are allowed without prior authorization. To use your device during lecture, you must leave the room. You will be responsible for any material you miss during your absence from lecture for this purpose. Please, do not ask questions about what you may have missed when you return to lecture.

Schedule

CHEM 1B

SRJC, Spring 2018, Branca

Week	Day	Date	Lab Activity	Notes on Lecture
1	Tues	Jan 16	No classes (PDA day)	
	Thurs	Jan 18	Safety	
2	Tues	Jan 23	Locker Check-In. Excel Practice.	
	Thurs	Jan 25	Determination of Molar Mass by Freezing Point Depression	
3	Tues	Jan 30	Study of Kinetics of Crystal Violet Bleaching	Jan 28: Last day to drop for refund
	Thurs	Feb 1	Kinetics of a Chemical Reaction: The Iodine Clock	Feb 4: Last day to drop without "W"
4	Tues	Feb 6	Kinetics of a Chemical Reaction: The Iodine Clock (cont.)	Feb 5: 1st census day
	Thurs	Feb 8	Equilibrium Constant of Esterification Reaction	
5	Tues	Feb 13	Equilibrium Constant of Esterification Reaction (cont.)	
	Thurs	Feb 15	***No classes (PDA day)***	
6	Tues	Feb 20	*TBA*	**Exam 1 on Tuesday**
	Thurs	Feb 22	*TBA*	
7	Tues	Feb 27	*In-Lab Activity: Acid-Base Equilibria*	
	Thurs	Mar 1	Infrared Spectroscopy	
8	Tues	Mar 6	Analysis of a Mixture of Carbonate and Hydrogencarbonate	
	Thurs	Mar 8	Study of Acid-Base Titration Curves	
9	Tues	Mar 13	Study of Buffers	
	Thurs	Mar 15	The Solubility-Product Constant of Copper(II) Iodate	
		Mar 19 - 25	***SPRING BREAK (No Classes)***	
10	Tues	Mar 27	The Solubility-Product Constant of Copper(II) Iodate (cont.)	**Exam 2 on Tuesday**
	Thurs	Mar 29	*In-Lab Activity: Thermodynamics*	
11	Tues	Apr 3	Temperature Dependence of the Vapor Pressure of Water	
	Thurs	Apr 5	Vapor Pressure of Water (cont.)	
12	Tues	Apr 10	Gas Chromatography of Alcohol in Beverages	
	Thurs	Apr 12	Supercritical Liquid Extraction of Essential Oils and GCMS Analysis	
13	Tues	Apr 17	GC and GCMS (cont.)	
	Thurs	Apr 19	Study of Electrolysis	Apr 22: Last day to drop with a "W"
14	Tues	Apr 24	Electrochemical Cells	**Exam 3 on Tuesday**
	Thurs	Apr 26	*In-Lab Activity: Coordination Compounds*	
15	Tues	May 1	Transition Metal Chemistry	
	Thurs	May 3	Transition Metal Chemistry (cont.)	
16	Tues	May 8	**Lab Exam**	
	Thurs	May 10	Nuclear Chemistry	
17	Tues	May 15	Check-out; Research Project Oral Reports	
	Thurs	May 16	Research Project Oral Reports	
18		May 22	**Finals Week – No Labs**	**Tuesday, May 22, 4 – 6:45pm**