

2015

Chemistry 102-001 General Chemistry II Spring 2015

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Recommended Citation

Bode, Kim, "Chemistry 102-001 General Chemistry II Spring 2015" (2015). *Chemistry Courses*. Paper 27.
http://spark.parkland.edu/chem_course/27

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CHE 102-001 General Chemistry II Spring 2015 Syllabus

Instructor: Kim Bode **Email:** kbode@parkland.edu **Office hour:** Mon 10:00-10:50am, Tues 12:00-12:50pm or by appt
Office: L262 **Office Phone:** 217-353-2064 **Classroom:** L239 Mon & Wed 8:00-9:50am **Lab:** M232 Thurs 8:00-10:50am

Overview of the course: This course investigates thermodynamics, kinetics, aqueous equilibria including acids and bases, electrochemistry, coordination chemistry, nuclear chemistry, molecular models and introduction to organic chemistry and biochemistry. Students are expected to participate in wet laboratory, computational laboratory and at home experiments.

Prerequisite: CHE 101 and MAT 098 or equivalent, minimum grade C

Required materials: Burdge, *Chemistry Atoms First* (2nd Edition), Chemistry 102 Laboratory Manual, Scientific Calculator (with log function), safety goggles with Z87 stamp, student lab notebook (same as for CHE101).

General Course Objectives: After completion of CHE102, students should be able to

- I. Demonstrate their ability to solve problems, by collecting and evaluating facts and using methods of scientific inquiry;
- II. Demonstrate their ability to compute and to think and express themselves effectively in quantitative terms;

For specific objectives per module, please see Cobra under general information.

Cobra → CHE102 Course → Content Tab → General Information Folder → Specific Learning Outcomes File

Attendance Policy: At Census Day the instructor is required to assess student attendance. If a student has not attended to that point, the student will be dropped with no refund of tuition and fees. After this date, students should not plan on an instructor withdrawal if you want to withdraw from the course. Students are ultimately responsible for your own withdrawal by the withdrawal date. Non-attendance after the census date will result in an F if the student does not withdraw from the class. Students are responsible for all material and announcements they may miss if absent.

Students expected to invest **at least 8-12 hrs/week outside of class**. The time requirement involves reading the chapters covered in class as well as completing all mandatory and suggested assignments. Few people will do well in this class if they do not study and spend the time.

Attendance at all laboratory sessions, including the first week of class, is required. **Failure to attend the first laboratory session will result in students being dropped from the course** unless they attend one of the makeup labs offered in the second week before their second lab period. If you **miss more than two labs, including the first lab, you will fail the course** regardless of your performance in the non-lab portion. There are **NO laboratory make ups**. Leaving the lab before completing all experimental portions of the lab, arriving to the lab after the class already started working on the experimental portion, or coming to lab without completing the pre lab assignment will result in a zero in the lab.

There are no make-up assignments for any activities in this class, outside of exams. If you know in advance that you have a serious conflict (**death in the family, serious illness, etc**), which will cause you to miss an exam; be sure to communicate your instructor in advance if it will be possible to complete the work on a different time. Documentation **will be required** to consider any make up request: physician's note, funeral flyer, Parkland's athlete letter, etc.

Homework: Homework is an important part of this course. It helps students understand the material covered in class and better prepare for quizzes and exams. You should not leave the homework assignments to the last day before it is due. Instead, try to finish problems to each section of a unit as we progress into the chapter. Ten sets of homework problems are assigned at 10 points each. The lowest grade will be dropped. Each homework assignment contains approximately 30 problems from the end of the chapter that review the material indicated by the objectives of each chapter. Solutions and work shown to answer all problems is required to receive full credit for each homework assignment. Homework assignments will be mostly graded for completion but a random sample of questions will be graded for performance. **Homework assignments are due at the beginning of the class on the day the quiz ends. No late homework is accepted. If you will be absent, you may have someone bring your work to class by 8am OR scan/photo & email each page to kbode@parkland.edu by 8am.**

Quizzes: 10 quizzes will be given worth 20 points each. The lowest quiz grade will be dropped. Students are expected to take the quiz within the specified two-day range of dates at the Natural Sciences Testing Center, L161. The start date listed on the course calendar indicates when the quiz will first be available at 9:00am. The quiz ending date is the second day at 4:00pm and is indicated on the course calendar. Students may bring their own calculator to the Testing Center. **No student may use a cell phone as a calculator.** Students will have access to a periodic table containing general equations and constants used in class. A copy of the periodic table available at the testing center can be found on Cobra under "Content" → "General Information". **You will need your Parkland ID.** Replacement ID's can be purchased at Office of Student Life U107. Testing Center hours are 9:00 am – 3:45 pm Monday through Thursday, 9:00am – 2:45 pm Friday.

Laboratory: Policies and Procedures

1. Read through the experiment in advance. All laboratory experiments are posted on Cobra under (a) "Content" → "Laboratory Information", or (b) "Checklist".
2. Prepare the laboratory notebook in advance, this implies including the following information on your **lab notebook**:
 - a. Name, date, title, course and section
 - b. Complete this part of the lab (pre lab) to turn in before entering the lab area:
 - i. Safety date table
 - ii. Purpose statement
 - iii. Short summary of the lab, including all experiments to be covered in the lab session, a brief description on how the experiment will be performed and safety issues related to the chemicals or equipment used.
 - iv. Answer for all pre lab questions posted on page two of the lab.
3. Wear appropriated clothing, as described on the safety contract;
 - a. Goggles must be worn all the time in the laboratory area. Gloves can be used under the student's discretion, unless otherwise indicated by the instructor. Gloves are *NOT* allowed in the laboratory commons.
4. Perform the experiment as instructed by the lab manual or instructor, label all solution prepared or solids transferred from the original container and record all data on your data sheets under observations.
5. While performing the lab, on the laboratory notebook, keep record of all procedure as it was performed in the lab. Make sure to indicate the glassware used, experimental values obtained and any other relevant observation to the lab.
6. When done, clean up your working area and unplug all electrical equipment. Perform a drawer check to make sure all glassware is present and clean in the drawers. Also make sure all common areas are clean.
 - a. Failure to leave all glassware in the drawer clean will result in a 5% deduction in that group's lab report.
 - b. Failure to clean all common areas will result in a 5% deduction on every student lab's report.
7. After completing the experimental portion of the lab, students may complete the report in the lab common area.

Lab Reports: All lab reports **must** include the following **parts** in the following **order**:

1. Prelab components (headings, safety table, purpose statement, summary of the lab and prelab answers).
2. Laboratory journal. A complete description of how the lab was accomplished (procedure) as well as all experimental observations such as experimental values and qualitative descriptions in table format.
3. Data analysis and calculations. Some labs require students to analyze their data by graphing their results using excel.
4. Conclusion. Each conclusion must include:
 - a. Short summary of what was accomplished in the lab, including all final results.
 - b. Identification of 2-3 procedural sources of error (not human error), and a short description of how they could be minimized.

Any violations on this list will result in your lab report being returned to you ungraded. You will have 24 hours to fix any errors and turn into your instructor at which point you will automatically be penalized 1 letter grade (10%). If you fail to turn in your lab report within 24 hours and with all these errors corrected, you will receive a zero for that lab.

Laboratory Assessment: The laboratory assessment grade is an individual examination consisting of an online theoretical exam and a wet-lab experiment part. The theoretical examination consists of lab-related questions focused on procedures and calculation performed as part of the lab. The wet-lab part of the laboratory assessment grade is based on an individual examination where students will be assigned to perform a specific laboratory task or procedure in the lab. Students will be expected to complete a proper laboratory report and the students will be evaluated based on proper and correct use of equipment, safety and proper laboratory report and conclusion as described on the laboratory policies and procedures section of the syllabus. Students will be allowed to use their lab notebook; but not allowed to use the lab manual for this examination.

Special Projects: The purpose of the special projects is to engage students in higher learning by having them use the chemistry knowledge acquired during the semester to present a more advanced chemical problem or concept.

Students can choose to make a poster, PowerPoint or Prezi presentation.

1. If you create a poster, make sure to use tri-fold poster board. If you create a PowerPoint or Prezi, you must submit this file electronically to a Drop-box on Cobra (no need to submit a hard copy of the PowerPoint). For Prezi presentations submit the "shared" link.
2. Whether you create a poster, PowerPoint or Prezi, you **must submit a Word file containing all of the content**. This will be submitted to a Drop-box on Cobra and scanned for plagiarism and content. All projects must have citations in the text of the content and a Reference/Works Cited page.
3. Student must choose a chemistry-related topic and use at least 1 primary research article (not a review article, a news article, or an advertisement) as a source. You must use at least 2 sources in total.

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- a. Each topic and primary research article must be uploaded into the corresponding dropbox on Cobra by the due date (*see date and time on Cobra under "Checklist"*).
- b. Each will be subjected to the instructor's approval.
4. Students have the opportunity to present their project during a Natural Sciences Poster Session (*see date and time on Cobra under "Checklist"*). Participation in this event is an extra credit opportunity.
 - a. If you choose to present, you can earn a maximum 15pts EC.
 - i. Present your project to an audience as a guest speaker will result in 15 points extra credit (this is a competitive process and requires you to submit an abstract that is chosen among other submissions).
 - ii. PowerPoint and Prezi presentations (require the students to bring their own laptop) as well as Poster presentations will result in 10 points extra credit.
 - iii. Attending to the poster session, but not presenting, will earn up to 5pts extra credit, if you write a reflection paper due at 12:00 noon into the corresponding dropbox on Cobra Friday 5/1/15.

Exams: Four exams will be given: three hour-exams and one cumulative final exam. The hour-long exams will be given on-campus at the Testing Center, L-161. Refer to Cobra for Testing Center Rules. Students will have access to scientific calculators as well as a periodic table containing general formulas and constant values at the testing center. Students are allowed to bring their own calculators to the testing center to take their exams. **No student will be allowed to use a phone as a calculator.**

Final Cumulative Exam: This exam covers material from CHE101 as well as from CHE102 and is worth 20% of the course total score. Each student must bring his or her own calculator, as well as pencil and/or pen to complete the exam. No calculators will be provided for students during the final exam. **No student will be allowed to use a phone as a calculator.**

Disability Services: If you believe you have a disability for which you may need an academic accommodation (e.g. an alternate testing environment, use of assistive technology or other classroom assistance), please contact: Cathy Robinson, Room U260, 217-353-2082, crobinson@parkland.edu

Grading Scale: A: 900-1000 points, B: 800-899 points, C: 700-799 points, D: 600-699 points, F: <600 points

Summary of Grades

Category	Activity	Points per Unit	# of Units	Total Points	Notes
First Week Activities (due by 4pm Friday Jan 16)	Introductory Lab	5	1	5	
	Syllabus Slip (CAS & KB Office visit)	2	1	2	
	Introductions Discussion	1	1	1	
	Email with Expectations	1	1	1	
	Syllabus Quiz on Cobra	1	1	1	
Lecture	Homework	10	10	90	Drop lowest 1
	Quizzes	20	10	180	Drop lowest 1
	Exams	100	3	300	
	Final Exam	200	1	200	
Laboratory	Lab Report (includes Prelab)	15	10	135	Drop lowest 1
	Theoretical Assessment	15	1	15	
	Practical Assessment	25	1	25	
Special Projects	Title	2	1	2	
	Abstract & References	2	1	2	
	Evaluations (3)	2	3	6	
	Prezi/PowerPoint/Poster	25	1	25	
	Molecular Models Worksheet	10	1	10	
Total points				1000	

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Syllabus Addendum Please check out Dr. Young's (VP of Academic Services) Syllabus Addendum on our course homepage in Cobra. The document highlights many of the policies and services available to help you succeed here at Parkland.
https://cobra.parkland.edu/shared/shared%20content%20files/syllabus_addendum.html

Schedule for CHE102-001, Spring 2015 *Modifications of the syllabus will be notified to the students in class and through Cobra.*

Week	Dates	Monday: Class L239	Tuesday:	Wednesday: Class L239	Thursday: Lab M232	Friday:
1	1/12 – 1/16	Intro to course, Sections 8.1, 8.3, 8.4		Sections 9.2-9.4, 15.2, 15.3, 15.5	Mandatory Introductory and Safety Lab	1st Week activities due 4pm
2	1/19 – 1/23	Martin Luther King Day campus closed		Sections 10.2, 10.3, 10.5, 14.1-14.5	Acids & Bases: pH Lab	
3	1/26 – 1/30	Sections 16.1-16.10	Quiz 1 begins in TC	Continue 16.1-16.10 HW1 due, Quiz 1 ends	Virtual Acids & Bases Lab	
4	2/2 – 2/6	Sections 17.1-17.6	Quiz 2 Ch 16 begins in TC	Continue 17.1-17.6, HW2 due, Quiz 2 ends	Aqueous Equilibria Titration Lab	
5	2/9 – 2/13	Continue 17.1-17.6	Quiz 3 Ch 17 begins in TC	Review for Exam 1, HW3 due, Quiz 3 ends	EXAM 1 available in TC 9am-12pm (noon)	
6	2/16 – 2/20	Sections 18.1-18.5 & 18.7		Continue 18.1-18.5 & 18.7	Electrochemistry Lab	
7	2/23 – 2/27	Sections 19.1-19.5	Quiz 4 Ch 18 begins in TC	HW4 due, Quiz 4 ends	Prof. Development Day campus closed Nuclear Chem Lab online	Title/Article due noon
8	3/2 – 3/6	Continue 19.1-19.5 & 19.7, 19.8	Quiz 5 Ch 19 begins in TC	Sections 20.1-20.7 and HW5 due, Quiz 5 ends	Nuc Chem Lab due 8am, Kinetics Lab	
9	3/9 – 3/13	Continue 20.1-20.7	Quiz 6 Ch 20 begins in TC	Review for Exam 2 HW6 due, Quiz 6 ends	EXAM 2 available in TC 9am-12pm (noon)	
10	3/16 – 3/20	Sections 3.9, 3.10, 4.5, 5.2-5.5		Sections 6.3-6.7, 7.1-7.7	Molecular Models	Abstract/Refs due noon
		<i>SPRING</i>	<i>BREAK</i>	<i>March 21-29</i>	<i>Campus closed</i>	
11	3/30 – 4/3	Start 22.1 - 22.3	Quiz 7 begins in TC	Continue 22.1 – 22.3 HW7 due, Quiz 7 ends	Nickel Amine Lab	
12	4/6 – 4/10	Continue 22.1 – 22.3		Continue 22.1-22.3	Gap Energy Lab	
13	4/13 – 4/17	Poster/PPT/Prezi present in class	Quiz 8 Ch 22 begins	Start 23.1 – 23.4 HW8 Quiz 8 ends	Organic Compounds Lab	
14	4/20 – 4/24	Continue 23.1 – 23.4		Continue 23.1 – 23.4	LAB ASSESSMENT in lab commons & M232	
15	4/27 – 5/1	Continue 23.5	Quiz 9 Ch23 begins in TC	Review for Exam 3, HW9 due, Quiz 9 ends Poster Session 4-6pm	EXAM 3 available in TC 9am-12pm noon Withdrawal Day 5 pm	E.C. Poster Session Reflection
16	5/4 – 5/8	Sections 23.5 – 24.1	Quiz 10 begins in TC	Review for final exam HW10 due, Quiz 10 end	Chromatography Lab	Friday finals no classes

FINAL EXAM is Monday, May 11, in L239 from 8am – 10 am. Bring a calculator and #2 pencil.

-- CHE102-001 SYLLABUS SLIP - Cut/tear off and return to Kim Bode's mailbox in L120 by 4pm Friday, Jan 16, 2015 --

(Print your name legibly here) I, _____, visited the Center for Academic Success in D120 and know where to get tutoring help.

(Get CAS staff member signature here) Verified by _____

I found Kim Bode's office L262. Verified by (Get faculty from L262 signature here) _____