Classes:  **Lectures**, MWTh 10-10:50 AM, (Block C), place TBA.  
**Review/quizzes/exams**, Weds evenings 6:30-7:50 PM, place TBA

Instructor: **Lectures**: Thomas C. Pochapsky, Rosenstiel 655, x62559, pochapsk@brandeis.edu  
Office hours: Mondays and Wednesdays 1-2 PM.

Textbook:  **Principles of Modern Chemistry 7th Edition**, Oxtoby, Gillis and Campion,  
**ISBN**: 9780840049315. Kindle versions are available on Amazon.

Exams: Weds. Sept. 26th, 6:30-8:30 PM  
Weds. Oct. 24th, 6:30-8:30 PM  
Weds. Nov. 28th, 6:30-8:30 PM  
Final exam TBA

Attendance: **Lectures**: Lectures will serve as your first introduction to the subject matter. Exams and quizzes will be based on lecture coverage, homework problems and textbook readings.

Homework: Homework, consisting of problems from the text, will be assigned and posted weekly on LATTE. The answers will be posted one week after problems are assigned, also on LATTE. Homework will not be collected, but if you do not do the homework, you will not do well on the quizzes or exams.

Quizzes: A quiz will be given each Wednesday evening at **6:30**, except on those Wednesdays when an hour exam is scheduled. **Arrival later than 6:30 will result in an automatic (-) grade on the quiz, no exceptions.** You will be given 20 minutes to complete the quiz on your own, after which you will break into small groups of 4-5 students and exchange quizzes with other students in your group for peer review. You will have 30 minutes to discuss solutions with other members of your group. Quizzes are graded,
and are given a (+) or (−) grade based on correctness. Five points are given toward your final grade for each (+) quiz, and no points for (−) grades. The quizzes contribute 10% to your final grade, and are excellent practice for the exams.

**Learning goals:** This course is designed to provide a background in understanding of chemical principles sufficient to enable the student to take courses in organic chemistry, biochemistry and physics subsequent to completion. The course will begin with generally applicable scientific concepts (measurement, precision, accuracy, reproducibility), followed by atomic structure and the periodic table, chemical bonding and molecular structure, introduction to gas behavior, thermodynamics and thermochemistry, and finishing with states of matter, phase diagrams and phase changes.

**Exams:** There will be three hour-long exams given during the semester (see above for dates). If an exam is missed without a medical excuse or without pre-arrangement with the instructor, a grade of zero will be recorded for that exam. **THERE ARE NO MAKEUPS FOR QUIZZES OR EXAMS.** If the student informs the professor prior to the exam that they are unable to take a quiz or exam, or provides written evidence of an emergency (doctor’s note, emergency room visit, etc.), s/he will receive the prorated average of the quizzes (or exams) that s/he has taken. Bring a calculator and extra writing implements to all quizzes and exams. NO cell phones, laptops, iPhones, iPads or any other device capable of remote communication or contacting the Internet are allowed in exams or quizzes.

*No “collaboration” is permitted on exams.*

The hour exams will be held on Wednesday evenings from 6:30 PM to 8:30 PM. The final will be scheduled by the University Registrar’s office later in the semester. **PLEASE DO NOT MAKE HOLIDAY TRAVEL ARRANGEMENTS THAT WILL CONFLICT WITH THE TIME OF AN HOUR EXAM OR THE FINAL.** AN EXAM MISSED BECAUSE OF AIRLINE RESERVATIONS, FAMILY FUNCTIONS, ETC. WILL NOT BE GIVEN AN EXCUSED ABSENCE.
Latte: This course will make considerable use of electronic supplements. Homework assignments and answers for homeworks, quizzes and exams will ONLY be posted on the Web, using the Latte portal for this course. Supplementary material as it becomes available will also be posted on the Web. You will also be able to use this site to view your quiz and exam grades. To access Latte, go to http://latte.brandeis.edu and log-in using your UNET ID and password.

E-mail: Announcements, changes in scheduling, etc., will all be posted via e-mail from Latte, so that even if you should miss a class, you will still be informed about changes that may occur.

Grades: Grading: Grades in the course will be weighted as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>3 hour exams (@ 100 points each)</td>
<td>55%</td>
</tr>
<tr>
<td>Final exam (200 points)</td>
<td>35%</td>
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<tr>
<td>Quizzes</td>
<td>10%</td>
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“Redemption points” – Students occasionally have a bad day on an hour exam or figure out a topic only after the exam has been given. In order to give students a second chance to show that they have mastered material, we use a “redemption points” system. The final exam is divided into four parts. The first three correspond to the sets of topics covered on the first three hour exams. If you score less than 100% on an hour exam, you have the chance to “redeem” up to half the points you missed by doing well on the corresponding section of the final. If your percent score on a section of the final is better than your percent score on the corresponding hour exam, your hour exam score will be replaced by the average of your hour exam score and your score on that section of the final. There is no penalty if you do worse on the final than on the hour exam. For example, if on hour exams 1 and 2, you get 60% and 90%, and on parts 1 and 2 of the final you get 98% and 88%, your score on hour exam 1 will be increased from 60 to (60+98)/2 = 79. Your score on hour exam 2 will remain unchanged. You will thus have earned 19 redemption points.
Calculation of final grades: Performing well in the course should not be a competition with your fellow students. The following table provides guaranteed letter-grade equivalences for any student whose performance falls within a specified range.

<table>
<thead>
<tr>
<th>Percentage of Total (after weighted average is taken)</th>
<th>Grade range</th>
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<tbody>
<tr>
<td>85-100 %</td>
<td>A—A+</td>
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<tr>
<td>70-84 %</td>
<td>B—B+</td>
</tr>
<tr>
<td>60-69 %</td>
<td>C—C+</td>
</tr>
<tr>
<td>50-59 %</td>
<td>D—D+</td>
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<tr>
<td>&lt; 50 %</td>
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The average grade in Chem. 15a is generally around B. Letter-grade equivalences to numerical scores are usually determined based on the class average and the distribution of scores. Any “curve” can only help, it cannot hurt, your grade. For example, if the average final score is 62%, that score will be set as the B and all other grades will be adjusted around that average. On the other hand, if the class average is 82%, that does not mean that 82% is now equivalent to a B. Rather, it means that the average grade earned in the class would be B+.

Special accommodations, participation in University-sanctioned events: If you must miss an exam due to a University-sanctioned required event (i.e., University sports team travel or meet, requirements for other classes), it is your responsibility to make prior arrangements with me and your coach or professor. We do not have makeup exams. If you have documented accommodations requirements (extra time on exams, etc.), please provide this information at the beginning of the semester so that all appropriate accommodations can be made. No accommodations can be made retroactively.

Academic integrity is central to the mission of Brandeis University. University policy on academic honesty may be found in the handbook “Rights and Responsibilities,” Section 4. While students are encouraged to study together and discuss subject matter inside and outside the classroom, exams must be your own individual effort. Cheating is unfair to your fellow students, to the instructor, and to yourself. You might think that in a class as large as CHEM 15, passing information or copying from a classmate during an exam goes unnoticed. It doesn’t. The consequences are embarrassing and time-consuming, and the incident remains a part of your permanent undergraduate record. Violations of University policies on academic integrity,
described in Section 4 of “Rights and Responsibilities,” will be reported to the Brandeis Student Rights and Community Standards Office. A first offense will result in a zero on the assignment. Subsequent offenses may result in failure in the course, suspension, or expulsion from the university.

*Cheating includes copying or sharing information with a fellow student on an exam, or consulting any written materials during an exam or quiz.
Syllabus and exam schedule for Chem 15a

Homework assignments for each week will be posted on Latte the Thursday before the week they should be completed. Answer keys will be posted for the previous homework on the weekend following their completion.

Fall, 2018

Week 1: Weds, Aug. 29th, 1st day of classes
Readings in text: Appendix B.1, Chapter 1.
Scientific method and philosophy of science, basics of measurement, moles and molarity.

Week 2: Sept. 3-9th (No class Monday, Labor Day).
Readings in text: Chapter 2: chemical formulae, equations, reaction yields and stoichiometry.

Week 3: Sept. 10th- Sept. 16th (No class Monday, Rosh Hashanah).
Readings in text: Ch. 3, Chemical bonding, Aufbau principle, periodicity and the periodic table.
Tuesday, Sept. 12th is the last day to switch to Chem 11.

Week 4: Sept. 17- Sept. 23rd (No class Weds, Yom Kippur). First day to elect P/F option, Sept. 20th.
Readings in text: Ch. 4, introduction to quantum mechanics. Wave functions, the hydrogen atom and the Aufbau principle.

Week 5: Sept. 24- Sept. 30th (No class Monday, Sukkot, Tuesday is a Brandeis Monday). EXAM 1
HELD ON WEDNESDAY EVENING THIS WEEK (Sept. 26th)
Sept. 27th is the last day to elect P/F option.
Readings in text: Ch. 5, Quantum mechanics and atomic structure.

Week 6: Oct. 1st-7th (No classes Monday, Shmini Atzeret).
Readings in text: Ch. 6, Molecular bonding and orbitals.

Week 7: Oct. 8-Oct. 14th.
Readings in text: Ch. 9, Gases.
**Week 8:** Oct. 15- Oct. 21st.
Oct. 17th is last drop date without "W".

Readings in text: Ch. 10. States of matter.

**Week 9:** Oct. 22-Oct. 28th.
**EXAM II will be held Weds, 10/24, this week.**
Readings in text: Ch. 11, Solutions, solubility and colligative properties.

**Week 10:** Oct. 29- Nov. 4th.
Readings in text: Ch. 12. Thermodynamic processes and thermochemistry.

**Week 11:** Nov. 5th- Nov 11th.
Readings in text: Ch. 12. Thermochemistry continued.

**Week 12:** Nov. 12th- Nov. 18th
Readings in text: Ch. 8, Transition metal complexes.

**Week 13:** Nov. 19th -25th (Thanksgiving week starts Weds).

**Week 14:** Nov. 26th- Dec 2nd. (EXAM 3 WILL BE HELD WEDS, Nov. 28th THIS WEEK)
Readings in text: catch-up

**Week 15:** Dec. 3rd -9th
Readings in text: Review.

**Week 16:** Dec. 10th -11th
Readings in text: Review. Last day of classes is Dec. 11th.

The final exam will be scheduled in consultation with the Registrar's office later in the semester.

**Please do not make travel arrangements for the holidays without consulting the University final exams schedule!** Plane reservations are not a legitimate excuse for missing an exam.