

# CHEM 237 (Organic Chemistry 1)

## Instructor:

Professor Andrei Straumanis

e-mail:

Mailbox:

Office Location:

Office Hours: M 2:15-3:15; W 4:20-5:20 (in our classroom after class) or by appointment.

## Course Website: <http://>

Links to the syllabus, seating charts, discussion board, and quiz and exam keys, and clicker presentations (posted after the class in which they were used).

**Emailing the Professor:** Please use CHEM 237 as the subject line in any correspondence. Only email the professor if you have a question that is personal in nature. All other questions should be directed to the Go Post. (Otherwise I end up answering the same question multiple times.) If you email me and I don't respond, try the Go Post since this usually gets a much faster response.

**Required Text:** Organic Chemistry: A Guided Inquiry, 2<sup>nd</sup> Edition, Straumanis, Houghton Mifflin. (The Solutions Manual for the homework Exercises found in Organic Chemistry: A Guided Inquiry, 2e is not required, but is available in the bookstore.)

**Required Equipment:** Turning Technologies Rf response card. (This is the UW sanctioned clicker that is used in GenChem, Biology and other UW courses). **Bring your clicker to class every day!!** You are responsible for keeping your clicker working. I will drop the lowest clicker quiz and the lowest participation grade so you will not be penalized the first time you forget your clicker, miss class, or your clicker does not work.

**Recommended Texts:** Organic Chemistry, 8<sup>th</sup> Edition, McMurry, Cengage follows the same topic order as the workbook (Organic Chemistry: A Guided Inquiry, 2e), but most any textbook can be used as a supplement.

**Recommended Equipment:** You should have access to a molecular model set for use outside of class. It is required that your group BRING A MODEL SET TO CLASS for ChemActivities 6 & 7.

<b>Grading:</b>	Short Quiz Section Quizzes (drop lowest of 5)	40 pts, 4%
	Long Quiz Section Quizzes (3-none dropped)	75 pts, 7.5%
	Clicker Quizzes (CQ) <u>one at start of each lecture</u>	100 pts, 10%
	Clicker Participation (CP) during each lecture	20 pts, 2%
	Take Home Exam 1 (TH1)	20 pts, 2%
	Take Home Exam 2 (TH2)	45 pts, 4.5%
	Midterm 1 (MT1), Friday Jan 30 <sup>th</sup>	200 pts, 20%
	Midterm 2 (MT2), Wednesday Feb 18 <sup>th</sup>	200 pts, 20%
	Final Exam – Thurs. March 19 <sup>th</sup> 2:30-4:20, Bag 131	300 pts, 30%

**Notes on Quizzes and Exams:** All quizzes and in-class exams will be taken individually. For exams, and on the first day of class, students will have assigned seats. The seating chart will be posted on the course website. Please know the location of your seat before coming to class. On exam days, please be able to provide the name of your TA and your quiz section.

**Quiz Section Quizzes (QSQ):** Five Short Quiz Section Quizzes worth 10 points each (on the days we do ChemActivities in Section) and three Long Quiz Section Quizzes worth 25 points each. We will drop your lowest short quiz. This means you can earn a maximum of 115 points in quiz section (11.5%). These are written quizzes graded by the TAs.

**Clicker Quizzes (CQ):** At the start of each lecture there will be a 5 point CQ (clicker quiz) over the material covered in the previous class period. Clicker quizzes will be taken individually. Please remain quiet until time is called. Your lowest clicker quiz score will be dropped. This means you will not be penalized the first time you miss class, forget your clicker, or your clicker malfunctions.

**Clicker Participation (CP):** After the clicker quiz and during each lecture there will be several clicker questions. Unlike the clicker quizzes, you are encouraged to work with your group to answer these clicker questions. When you have arrived at an answer you must each individually key in your response. 2% of your grade is determined by your answers to these clicker questions according the following scheme: full credit for a correct response, 90% credit for a response of “Not Sure” or “Need more time” and 80% credit for an incorrect response, 0% for no response.

**Group Take Home Exams (TH1 & TH2):** Take home exams are to be completed collectively by your group. Here are the rules.

- Take Home Exam Groups are the same as your in-class groups
- You may consult with the instructor, TA’s assigned to this section, or any student in your group
- You may use any published resource (e.g. your textbook or workbook but not the notes of a person outside your group)
- You may NOT consult with or receive aid from any other person (especially TA’s not in our sections or students outside your group).

**Midterm Exams (MT1 & MT2):** Each midterm will be worth 200 points, and be cumulative, but focus on the most recent material.

**Final Exam (FE):** The cumulative final will be worth 300 points

**Makeup Exams:** There will be no makeup exams or rescheduled exams for any reason. In the event of an unavoidable absence, the reason for the absence must be approved, preferably in advance. The proper procedure that you should adopt in such cases is as follows:

- 1) Personally report your absence from an hourly exam within 72 hours.
- 2) Bring proof of your unavoidable cause such as a doctor’s note, an accident report, a memorial folder, or similar documentation. The documentation must include a contact name, a telephone number, and an e-mail address.
- 3) If the absence is determined to be excusable, then the weight of your final exam will be increased proportionately towards calculating the course grade. If your absence does not meet the above criteria and is determined inexcusable, you will be given a zero for that exam.

**Re-grades:** Requests for re-grades must be submitted no later than one week from the first day exams are available for pickup. Submissions after the deadline will not be considered regardless of their merit. Your request must be made through your TA and it should include your name, the page number in which an error was made, and an explanation of the grading error. The entire exam will then be re-graded (you may lose points if your final score is lower than your original score). To minimize meaningless re-grades, only re-grades that result in a change of at least 5 points will be accepted. **All exams are scanned prior to being returned to you and any exams submitted for re-grade that have been altered in any way will be given a zero.**

**Academic Honesty:** Please do not cheat! Cheating of any sort, including communicating during the clicker quizzes, will not be tolerated. The policy of the University on academic misconduct will be strictly enforced. This is a collaborative course, but the guidelines on when you can and cannot collaborate are clearly defined in this document.

**Homework:** After each class period you must do the following (though homework is not collected or graded)

- **Complete the ChemActivity if your group did not finish in class (including Exercises)**
- **Do any assigned homework problems in Carey**
- **Make a list of sticking points or questions for your group, TA, or instructor**
- **Read any assigned sections in Carey** (this should be your final preparation for the clicker quiz)

Preparing for the quiz will be most effective if you do it in the context of a regular and productive study group, or with a study partner. Just as you would for a successful exercise routine, it is best to set up standing weekly dates with your study partner(s). **This is the single most important thing you can do to make yourself successful in this course!!**

### **Group Work in Class**

- The bulk of class time will be spent actively thinking, drawing structures, working with models etc. as part of a self-managed team of three or four students.
- Group work will not be graded. The purpose of group work is to learn the material, dispel misconceptions, and ask questions.

### **Group Membership and Team Management**

- Each team may appoint a manager, or may choose to collectively ensure there is agreement on each question before moving on, that no one is going ahead or falling behind, no one dominates the discussion, and everyone feels comfortable speaking up, especially if they are frustrated, confused or behind.
- The instructor will assign the group membership for week 1 & then reshuffle group membership for week 2. (Please check the website for your assigned seat before coming to class).
- By the end of week 2 you will be asked to form your own groups, and choose a block of 3-4 seats in the classroom using the Go Post (course discussion board). These seats/groups will remain for the rest of the quarter. (If you have a conflict in your group, I am happy to help you resolve it. If this does not work, a change can be made.) The more active you are in the process of choosing a group that fit your needs, the more likely you are to be satisfied with your group and have a positive experience in this course.

### **Special Needs**

The University of Washington is committed to providing access, equal opportunity, and reasonable accommodation in its services, programs, activities, education, and employment for individuals with disabilities. To request disability accommodations contact the Disability Services Office at least ten day in advance at: (206) 543-6450/V, (206) 543-6452/TTY, (206) 685-7264 (FAX), or dso@u.washington.edu.

## Schedule for Chemistry 237A, Winter 2009, Straumanis

Monday	Tuesday (quiz section)	Wednesday	Friday
<p><b>Jan 5</b> <i>In class: do</i>  <b>ChemActivity 1</b>  <i>Homework</i> (to complete before Quiz Section): <b>Straumanis:</b> Exercises for CA 1 on pp. 13-14;  <b>Carey:</b> Read section 1.9; Do problems 1.42a,b</p> <p><b>Register you clicker by going to the course website (<a href="http://faculty.washington.edu/andreij2">http://faculty.washington.edu/andreij2</a>) and clicking on the clicker registration link.</b></p>	<p><b>Jan 6</b>  <b>Begin with Short Quiz 1 covering ChemActivity 1</b>  <i>During Quiz Section your group will do...</i> <b>ChemActivity 2</b></p> <p><i>Homework (to complete before Wed):</i>  <b>Straumanis:</b> Exercises for ChemActivity 2;  <b>Carey:</b> Read sections 1.3, 1.4, 1.7; Do prob's 1.40, 1.43-1.45, 1.46b-i, 1.47, 1.51</p>	<p><b>Jan 7</b>  <b>Starting today each class will begin with a clicker quiz over the previous ChemActivity (e.g. CA 2).</b>  <i>During class your group will do...</i>  <b>ChemActivity 3</b></p> <p><i>Homework (to complete before Fri):</i>  <b>Straumanis:</b> Exercises for ChemActivity 3;  <b>Carey:</b> Read sections 1.1, 2.2-2.7, 2.20-2.23; Do prob's 2.2, 2.18, 2.19, 2.45</p>	<p><b>Jan 9</b>  <i>In class...</i> <b>CA 4A</b>  <i>Homework:</i> <b>Straumanis:</b> Exercises for ChemActivity 4A;  <b>Carey:</b> Read sections 1.2, 1.5, 1.10, 2.17, 4.5-4.6; Do prob's 1.55, 1.57, 2.37</p> <p><b>If you lose your clicker or change clickers for some reason, send an email to the instructor with your student number and new Device ID.</b></p>
<p><b>Jan 12</b>  <b>CA 4B</b>  <b>Seat/Group Registration Begins: click on the link called "group registration" on course website</b>  <b>Straumanis:</b> Exercises for CA 4B;  <b>Carey:</b> Read sections 1.11-1.12; Do prob's 1.22-1.26</p>	<p><b>Jan 13</b>  <b>Begin with Short Quiz 2 covering ChemActivity 4B</b>  <i>During Quiz Section do...</i> <b>CA 4C</b>  <b>Straumanis:</b> Exercises for CA 4C;  <b>Carey:</b> Read 1.13-1.16; Prob's 1.63-1.71            Be sure to memorize the seven <math>pK_a</math> values listed in Table 4.6, and know that all strong acids have a very low <math>pK_a</math> (assume it is zero for this course)</p>	<p><b>Jan 14</b>  <b>CA 5A</b>  <b>Straumanis:</b> Exercises for ChemActivity 5A;  <b>Carey:</b> Read (none); Prob's 1.46a, 1.48-1.50</p>	<p><b>Jan 16</b>  <b>CA 5B</b>  <b>Straumanis:</b> Exercises CA 5B;  <b>Nomenclature Worksheet 1</b> (NW1) to CTQ 17 (pp. 73-76)  <b>Carey:</b> Read 1.8, 1.18; Prob's 1.72, 1.73</p>
<p><b>Jan 19</b>  <b>No Class</b>  <b>MLK DAY</b></p>	<p><b>Jan 20</b>  <b>Begin with Short Quiz 3 covering ChemActivity 5B</b>  <i>During Quiz Section do...</i> <b>CA 6A</b>  <b>Straumanis:</b> Exercises CA 6A; finish NW1 (<i>Model 4 is optional</i>) and do Exercises (p. 78)  <b>Carey:</b> Read 3.1-3.3 (&amp; 2.1, 2.11-2.15); Prob's 3.17-3.22, 3.29a, (&amp; 2.23-2.25, 2.27-2.28)  <b>Your group must bring at least one model set for CA 6.</b></p>	<p><b>Jan 21</b>  <b>Sit in your self-selected groups/seats starting today!</b>  <b>CA 6B</b>  <b>Straumanis:</b> Exercises for CA 6B;  <b>Carey:</b> Read 1.6, 2.8-2.10; Prob's 1.52-1.54, 1.58, 2.20-2.22</p> <p><i>TH1 posted</i></p>	<p><b>Jan 23</b>  <b>CA 6C</b>  <b>Straumanis:</b> Exercises for CA 6C;  <b>Carey:</b> Read 5.2-5.4; Prob's 5.2-5.7</p>
<p><b>Jan 26</b>  <b>CA 7A</b>  <b>(if you finish early start NW2)</b>  <b>Straumanis:</b> Exercises CA 7A; do NW2 through CTQ 7 (except 7c) (pp. 109-110).  <b>Carey:</b> Read 3.11; Prob's 3.25, 3.26, 5.29</p> <p><b>Your group must bring at least one model set for CA 7.</b></p>	<p><b>Jan 27</b>  <b>No Quiz</b>  <b>Review for Midterm 1</b></p> <p><i>No ChemActivity during Quiz Section</i></p>	<p><b>Jan 28</b>  <b>Turn in TH1</b>  <b>CA 7B</b>  <b>Straumanis:</b> Exercises CA 7B; finish NW2, including Exercises except CTQ 8d, Ex 1 parts d,e,k, &amp; l, and Ex 2 parts  <b>Carey:</b> Read 3.4-3.12, and 4.1-4.3, 5.1, 9.2 (on naming); Prob's 3.30-3.32, 4.26; and 4.21, 4.22, 4.24, 5.25, 5.27, 9.16, 9.18 (on naming)</p>	<p><b>Jan 30</b>  <b>Midterm 1</b>            Covering CA's 1-7, NW1 &amp; NW2</p>
<p><b>Feb 2</b>  <b>CA 8A</b>  <b>Straumanis:</b> Exercises for CA 8A;  <b>Carey:</b> Read 4.10, 6.4-6.8; Prob's 4.46</p>	<p><b>Feb 3</b>  <b>Begin with Short Quiz 4 covering ChemActivity 8A</b>  <i>During Quiz Section do...</i> <b>CA 8B</b>  <b>Straumanis:</b> Exercises for CA 8B;  <b>Carey:</b> Read 6.10-6.11; Prob's 6.47</p>	<p><b>Feb 4</b>  <b>CA 9A</b>  <b>Straumanis:</b> Exercises for CA 9A;  <b>Carey:</b> Read 6.15-6.19; Prob's 6.49</p>	<p><b>Feb 6</b>  <b>CA 9B</b>  <b>Straumanis:</b> Exercises for CA 9B;  <b>Carey:</b> Read 1 6.1-16.13; Prob's 16.25 (except problem 16.25i)</p>
<p><b>Feb 9</b>  <b>CA 10A(Part 1&amp;2)</b>  <b>Straumanis:</b> Exercises for CA 10A;  <b>Carey:</b> Read 1.7, 6.12-6.14 (A1), and 2.18, 2.19, 6.1-6.3, 9.9-9.10 (A2); Prob's 2.42, 2.43 (A1); and 6.30, 6.31, 6.32a,b,d,e,g; 6.34a, c-g, 9.20 (A2)</p>	<p><b>Feb 10</b>  <b>Begin with Short Quiz 5 covering ChemActivity 10A</b>  <i>During Quiz Section do...</i> <b>CA 10B</b>  <b>Straumanis:</b> Exercises for CA 10B;  <b>Carey:</b> Read 4.4, 6.20; Prob's 2.26-6.28 only a, b, d-h, k, l; 6.37b-f</p>	<p><b>Feb 11</b>  <b>CA 11</b>  <b>Straumanis:</b> Exercises for CA 11;  <b>Carey:</b> Read 9.3-9.6, 9.11-9.13; Prob's 9.25a-d, g-k; 9.26a-h, 9.27</p>	<p><b>Feb 13</b>  <b>CA 12A</b>  <b>Straumanis:</b> Exercises for CA 12A;  <b>Carey:</b> Read 7.1-7.4, 7.8; Prob's 7.26-7.29</p>
<p><b>Feb 16</b>  <b>No Class</b>  <b>President's DAY</b></p>	<p><b>Feb 17</b>  <b>No Quiz</b>  <b>Review for Midterm 2</b></p> <p><i>No ChemActivity during Quiz Section</i></p>	<p><b>Feb 18</b>  <b>Midterm 2</b>            Covering CA 1-12A; NW1, NW2</p>	<p><b>Feb 20</b>  <b>CA 12B</b>  <b>Straumanis:</b> Exercises for CA 12B;  <b>Carey:</b> Read 7.5-7.7, 7.9-7.14, 7.16, 7.17; Prob's 7.30-7.41, 7.44b, c, f, g, 7.46, 7.48</p>

<b>Feb 23</b> <b>CA 13A</b> <b>Straumanis:</b> Exercises for CA 13A; <b>Carey:</b> Read 8.1-8.3; Prob's 8.19, 8.21, 8.22, 8.30	<b>Feb 24</b> <b>Long Quiz 1 focusing on ChemActivities 12B-13A</b>  <i>No ChemActivity during Quiz Section</i>	<b>Feb 25</b> <b>CA 13B</b> <b>Straumanis:</b> Exercises for CA 13B; <b>Carey:</b> Read 4.12, 8.5, 8.12-8.14; Prob's 4.37, 8.27	<b>Feb 27</b> <b>CA 13C</b> <b>Straumanis:</b> Exercises for CA 13C; <b>Carey:</b> Read 4.7-4.9, 8.4, 8.6-8.9; Prob's 4.40, 4.43, 8.23-8.25, 8.31, 8.34-8.36
<b>Mar 2</b> <b>CA 13D</b> <b>Straumanis:</b> Exercises for CA 13D; <b>Carey:</b> Read 4.11, 8.11; Prob's 4.38a-d, 4.39, 4.42, 8.40, 8.46	<b>Mar 3</b> <b>Long Quiz 2 focusing on ChemActivity 13</b>  <i>No ChemActivity during Quiz Section</i>	<b>Mar 4</b> <b>CA 14A</b> <b>Straumanis:</b> Exercises for CA 14A; <b>Carey:</b> Read 5.5-5.7; Prob's 5.8-5.13	<b>Mar 6</b> <b>CA 14B</b> <b>Straumanis:</b> Exercises for CA 14B; <b>Carey:</b> Read 5.8-5.15, 5.18, 8.11, 9.7; Prob's 5.33-5.41, 8.20, 8.32, 8.39, 8.42, 8.44 <b>TH2 posted</b>
<b>Mar 9</b> <b>CA 14C</b> <b>Straumanis:</b> Exercises for CA 14C; <b>Carey:</b> Read 5.16, 5.19; Prob's 5.42-5.44	<b>Mar 10</b> <b>Long Quiz 3 focusing on ChemActivity 14</b>  <i>No ChemActivity during Quiz Section</i>	<b>Mar</b> <b>CA 15A</b> <b>Straumanis:</b> Exercises for CA 15A; <b>Carey:</b> Read 4.14-4.19, 7.9, Prob's 4.44-4.46, 4.48-4.52, 8.33	<b>Mar 13</b> <b>Turn in TH2</b> <b>CA 15B</b> <b>Straumanis:</b> Exercises for CA 15B; <b>Carey:</b> <b>Reading and Prob's TBA</b>
<b>Final Exam – Thursday Mar. 19<sup>th</sup></b> <b>2:30-4:20, Bagley 131</b>			

### My view of organic chemistry:

Many students view organic chemistry as a cruel hurdle placed in their path to test their tolerance for pain. Consistent with this view, many students' main goal is to survive the course with a decent grade. I encourage you to expect more from this course for two reasons:

1. I have found that students are more successful at organic chemistry when they enjoy it, so I have worked hard to create a course that students can enjoy if they work hard.
2. Organic chemistry is an opportunity to hone skills like data analysis, problem solving, and working effectively as part of a group. If you invest the time and energy you will learn skills in this course that will make you more effective in your other courses and in whatever career you choose.

### Organic chemistry is not a hurdle; it is a staircase to a new and powerful way of dealing with the world.

That is why, more than any other course, admissions committees and future employers care about your grade in organic chemistry.

### Advice from Past Students

I know you also care about your grade. Who better to give advice about how to be successful in this course than students who have been through it? The following are student answers to the question: What advice do you wish someone had given you at the start?

- You may think (like I did) that group work in organic chemistry is a bad idea. (I thought it would be the blind leading the blind.) But it really does work. I experienced both. I had lecture for Organic 1, and I have really enjoyed the group work in Organic 2.
- If I was starting out I would want someone to tell me that 1) there are no stupid questions and you should always ask your group because their thoughts will help, 2) get in a group with people you work well with because if you don't interact well learning is harder, and 3) use your in class study groups for studying outside of class. Good luck!
- Don't fall behind. Playing catch up is not fun. Don't be afraid to ask questions and argue in your group. That is the way learning is done in this class.
- Give yourself some time to settle into group learning. Lots of us did not think we would like it or that it would work. It does.

- I really didn't want to do group work at first because I have been successful taking notes and studying by myself. But it works. Do not hesitate to talk and meet other students in and out of class. They understand things you don't, and vice versa.
- Learn the reactions and read the textbook (Carey).
- Working together is the most important asset you have. Teaching others is an awesome way to reinforce what you have learned.
- Don't be afraid to share your opinions with your group.
- Do the (homework) Exercises before the quiz.
- Keep up. Do the homework and go to quiz section.
- If you sit passively in your group, you don't help anyone (especially yourself).
- Find people you work well with in and out of class. It helped me to find a study partner who I could meet with twice a week outside of class.
- Do not be afraid to get involved with your group. Everyone is interested in doing well and will be very willing to help you out.
- I wish I had asked more questions and been more engaged in group discussions from the start.
- Do not let yourself feel discouraged. The teacher and your classmates can and will help you.
- Feel free to ask a question in group even if you think it is a stupid question.
- I was intimidated at first. Don't be afraid to ask questions.
- This format is much more fun and less intimidating than a lecture.
- You actually learn in class. In my lecture classes it was always about going home and trying to figure it out later.
- This method helped me learn more and remember more than I thought possible.
- Don't be afraid to express your misconceptions from gen chem. We all have them.
- Make note cards.
- Get to know your group.
- It seems strange at first, but get to know your classmates. The faster you meet people and become comfortable the better the class will be.
- Finish each activity before the quiz. Meet with your group outside of class.
- Don't sit quietly in your group. The more you talk about organic chemistry the more you will understand.
- Find a study group ASAP and meet regularly every week. I wish I had done this sooner.
- At the start, I didn't think I would like it. I usually like to work and study individually. But I really liked the group work.
- If you think you are right, speak up to your group. You might be, but in any case your whole group will learn from it.
- I wish I had started with a more positive attitude, and that I had got to know more people at the start who I could study with outside of class.
- Get comfortable with your group as soon as possible and do not be afraid or embarrassed to ask questions of them.
- Finish the exercises each time.

- I loved the way this class was taught. It really helped me learn the material in a way that would make it stay with me. If I had been in a lecture section I wouldn't have done so well.
- Come to class expecting to learn a new concept, not just scribbling notes for an hour and a quarter.
- Set aside a little time to study organic every day. If you do this you will not be so overwhelmed come exam time.
- Don't be afraid to ask questions. Everyone is in the same position as you.
- I liked the idea of group work, but was afraid it would not prepare me for the final exam. My advice to future students: Don't worry. Fall into the format and it will carry you through.
- Don't let yourself take the course lightly just because class is fun and relaxed. Do the homework and reading.