CHM 116-C  
Spring 07

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Lectures  Monday and Wednesday each week (Fridays as announced) at 10:30 AM in WTHR 200
Website  http://www.chem.purdue.edu/courses/chm116/
WebCT Vista  http://www.purdue.edu/ecourses/
Supplemental Instruction:  http://www.cla.purdue.edu/asc

Course Supervisor  Dr. Susan C. Nurrenbern, BRWN 1144, phone 4-0823; nurrenbe@purdue.edu

Additional Places for Help and Answers

General Chemistry Office, BRWN 1144, 49-45250 The staff in this office handles all the administrative details associated with the course. For example, go to this office to change your schedule (weeks 2 and 3), to get signatures on university forms such as Form 23, to report absences and complete absence forms. Staff members are there to help you but they must also abide by the professors’ and university’s rules.

TA Office Hours, WTHR 116 Each CHM 116 TA will hold a one-hour office hour each week where any CHM 116 student can go to get help with chemistry any CHM 116 TA at no charge. This is 40–50 hours each week where free help is available from the CHM 116 staff.

Chemistry Resource Room, WTHR 117 The staff in this area can answer many of your chemistry related questions but going to a CHM 116 TA is recommended. This is also an area where you can study alone or with others.

CASPiE PLTL Sessions  to be announced

Required Materials


- A CPSrf response pad for lectures. These are available in the bookstores and are commonly called “clickers”.

- A simple, battery-operated scientific calculator with exponential, logarithm and square root functions will be needed for exams. Alphanumeric and programmable calculators will not be allowed for exams.

- **Approved safety goggles** are available at the bookstores, outside WTHR 200 during the first two weeks of classes or from the storeroom on the 1st or 2nd floor in BRWN.

- A carbonless-copy laboratory notebook. (If you have sufficient space in the lab notebook you used for CHM 115, it is acceptable to use that notebook for CHM 116.)

- A Sharpie (black, permanent ink) for marking lab glassware

- A virus-free electronic storage device for lab data.

- A padlock for your assigned lab drawer. (beginning Week #4, Feb 1)

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ADVICE FROM YOUR PROFESSORS

A University is like a Health and Fitness Center for your Brain.

When you pay tuition to an academic institution such as Purdue, it is like paying fees to join a Health and Fitness Center. Purdue is a place to exercise and develop your brain “muscle”; health clubs or fitness centers focus on exercising other muscles of your body. Your membership in a “mental exercise club” such as Purdue gives you the opportunity to take advantage of the resources Purdue makes available to exercise your brain just as joining a health club gives you the opportunity to take advantage of the health club’s equipment and resources. Simply being a member of either “club” does not guarantee success. As with a health club, the benefit you gain from a “mental exercise club” depends on the amount, and more importantly, the quality of effort you exert.

How Do I Learn From Lectures?
You can’t learn from lectures if you do not attend them or do not think about the information as it is presented during lectures.

You are responsible for all material covered and announcements made in lecture. Lectures will be held in WTHR 200 and the lecture times are listed on the front cover of this packet and are on your schedule card.

▷ Read the assigned material before lecture.

▷ Take and summarize lecture notes. Copies of lecture notes taken by a graduate instructor will be available in the Chemistry Resource Room (WTHR 117) within a day or two following the lectures. Photocopies of someone else’s notes are not a substitute for attending lectures.

▷ Audio recordings of the lectures can be downloaded from the Boilercast website.

Do some work in chemistry every day. In fact, you should spend about 45 minutes to one (1) hour each day on each subject.

▷ Work at least two chemistry problems each day. If you are drawing a blank about the problem after 10-15 minutes, go on to another problem. Seek help from a graduate instructor the next day. After a day or so, solve related problems in the text.

▷ Write down your problem solutions. It doesn’t help most people to just review mentally by “thinking about it.” You must practice if you are going to be proficient and efficient during exam times!

Basic Guidelines for Learning In a Cooperative Group

You will be expected to work constructively and cooperatively in a group for lab activities.

Appropriate Behaviors

▷ Treat each other with respect. This includes being on time and being prepared.

▷ Ask for and listen to everyone’s ideas and opinions.

▷ Get everyone involved in some way.

▷ Express and justify your ideas to other.

Inappropriate Behaviors

▷ Dominating the group.

▷ “Telling”.

▷ Distracting the group from the planned task.

▷ Failing to complete the task(s) you are assigned in the group.

▷ Freeloading

When Should I Do Homework?
Your assigned homework is considered to be a minimum requirement for keeping focused and learning the material in each chapter. You should practice using additional problems from the text similar to those assigned.

The following guidelines should be helpful if you want to do well in a technical course such as CHM 116 which will probably involve relearning concepts or learning concepts that you did not have in your high school chemistry course. Learning new material requires constant reinforcement which means you may have to change your study habits.

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# CHM 116, Spring 2007 LECTURE (Anticipated) and EXAM SCHEDULES

**LECTURES WILL BE IN WTHR 200**

**EXAMS WILL BE IN ELLIOTT HALL OF MUSIC**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Day</th>
<th>Lecture Topics</th>
<th>Text Chapter(s)</th>
<th>Exams</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/8</td>
<td>M</td>
<td>Stoichiometry</td>
<td>3</td>
<td></td>
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<tr>
<td></td>
<td>1/10</td>
<td>W</td>
<td>Transformations of Functional Groups</td>
<td>15.4</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1/15</td>
<td>M</td>
<td>NO CLASSES (MLK Day)</td>
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<td></td>
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<tr>
<td></td>
<td>1/17</td>
<td>W</td>
<td>Kinetics</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1/22</td>
<td>M</td>
<td>Kinetics</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/24</td>
<td>W</td>
<td>Kinetics: Catalysts in Industry and the Environment</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1/29</td>
<td>M</td>
<td>Kinetics: Biological Catalysts</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/31</td>
<td>W</td>
<td>Partial Ionization of Acids</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2/5</td>
<td>M</td>
<td>Equilibrium</td>
<td>18</td>
<td>Exam I (2/8)</td>
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<tr>
<td></td>
<td>2/7</td>
<td>W</td>
<td>Acid-Base Equilibrium</td>
<td>18</td>
<td>7 pm - 8 pm</td>
</tr>
<tr>
<td>6</td>
<td>2/12</td>
<td>M</td>
<td>Acid-Base Equilibrium</td>
<td>18</td>
<td></td>
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<tr>
<td></td>
<td>2/14</td>
<td>W</td>
<td>Titration</td>
<td>17</td>
<td></td>
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<tr>
<td>7</td>
<td>2/19</td>
<td>M</td>
<td>Buffers: Blood Chemistry</td>
<td>18</td>
<td></td>
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<tr>
<td></td>
<td>2/21</td>
<td>W</td>
<td>Equilibrium</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>2/26</td>
<td>M</td>
<td>Equilibrium: Haber Process</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2/28</td>
<td>W</td>
<td>Reactions with O₂, metabolism</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>-mid-semester-</strong></td>
<td></td>
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</tr>
<tr>
<td>9</td>
<td>3/5</td>
<td>M</td>
<td>Enthalpy and Thermochemistry (ΔH)</td>
<td>6</td>
<td>Exam II (3/5)</td>
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<tr>
<td></td>
<td>3/7</td>
<td>W</td>
<td>Enthalpy and Thermochemistry (ΔH)</td>
<td>6</td>
<td>6:30 pm - 7:30 pm</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td><strong>SPRING BREAK</strong></td>
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<tr>
<td>10</td>
<td>3/19</td>
<td>M</td>
<td>Thermodynamics (ΔG, ΔS)</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3/21</td>
<td>W</td>
<td>Thermodynamics</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>3/26</td>
<td>M</td>
<td>Thermodynamics</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3/28</td>
<td>W</td>
<td>By-products of Fossil Fuels Combustion</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>4/2</td>
<td>M</td>
<td>Behavior of the Elements</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4/4</td>
<td>W</td>
<td>Redox Chemistry</td>
<td>22</td>
<td></td>
</tr>
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</table>

Purdue University
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Day</th>
<th>Topic</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>4/9</td>
<td>M</td>
<td>Electrochemistry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4/11</td>
<td>W</td>
<td>Electrochemistry</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>4/16</td>
<td>M</td>
<td>Electrochemistry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4/18</td>
<td>W</td>
<td>Electrochemistry</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>4/23</td>
<td>M</td>
<td>Fuel cells</td>
<td></td>
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<tr>
<td></td>
<td>4/25</td>
<td>W</td>
<td>Hydrogen Storage</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>4/30 - 5/5</td>
<td></td>
<td>FINAL EXAM (date and time to be announced)</td>
<td>(The semester ends Saturday, May 5, 5:00 PM)</td>
</tr>
</tbody>
</table>
YOU WILL EARN AN AUTOMATIC GRADE OF "F" IN CHEM 116 THIS SEMESTER IF YOU:
You will earn an automatic grade of "F" in CHEM 116 this semester if you:

- miss three (3) or more of the 13 scheduled laboratory sessions (weeks 1–13) without excused absences.

Or

- fail to satisfactorily complete three (3) or more laboratory projects with your group. Completion of a lab project includes:
  (a) attendance in lab
  (b) participation in the laboratory work
  (c) completion of weekly lab assignments
  (d) help with lab report preparation and
  (e) completion and timely submission of a satisfactory lab project report.
Failure to submit a lab report counts as a failure-to-complete lab.

You are expected to arrive on time, properly dressed and prepared for lab work when you arrive. If you arrive at lab more than 10 minutes late or improperly dressed then you will be considered unprepared to do the lab work and you will be required to leave the lab for the day. You will not get a grade for that lab and it will count as a failure to complete lab. If you arrive 1 - 10 minutes late for lab, prefab answers will be considered late and not accepted for grading.

The graduate instructors must close the laboratories by the end of your scheduled lab period (that is, 10:20 AM, 2:20 PM or 5:40 PM). At that time all equipment must be cleaned and put away and lab drawers locked so the lights can be turned out and the doors closed.

Weeks 1 - 6

Each laboratory report is due at the beginning of lab one-week after lab work has been done except where otherwise noted(*). Fifty percent (50%) of the maximum points, will be deducted from the score for all team members for all late lab reports. No laboratory reports will be accepted and graded beyond one week after the report is due.

All reports must be typed on one side of white unlined paper. All graphs must be computer generated using a spreadsheet program such as Microsoft Excel. Information about the format for lab reports is in your lab manual.

The scheduled lab projects may be in a different order than printed in the lab manual. Be sure to check the schedule each week to identify the lab work you will be completing.
### CHM 116-C, Spring 2007 Laboratory Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lab Project</th>
<th>Source</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/11</td>
<td>Check-in; Safety Review &lt;br&gt;Registering CPSrf Response Pads &lt;br&gt;Basics of EXCEL &lt;br&gt;<em>[You will need to bring a lab notebook and your CPSrf Response Pad to this lab.]</em></td>
<td>Ch 1</td>
<td>11ᵃ pts</td>
</tr>
<tr>
<td>2</td>
<td>1/18</td>
<td>A Chemical Oscillation Reactionᵃ</td>
<td>Ch 2</td>
<td>25ᵃ pts</td>
</tr>
<tr>
<td>3</td>
<td>1/25</td>
<td>Rate Law and Activation Energy</td>
<td>Ch 3</td>
<td>25 pts</td>
</tr>
<tr>
<td>4</td>
<td>2/1</td>
<td>LeChatelier’s Principle &lt;br&gt;<em>[Personal lock needed for lab drawer.]</em></td>
<td>Ch 4</td>
<td>25 pts</td>
</tr>
<tr>
<td>5</td>
<td>2/8</td>
<td>Equilibrium Concentrations</td>
<td>Ch 5</td>
<td>25 pts</td>
</tr>
<tr>
<td>6</td>
<td>2/15</td>
<td>Acid-Base Equilibria (Part I)</td>
<td>Ch 6</td>
<td>25 pts</td>
</tr>
</tbody>
</table>

### Weeks 7 - 14

7  2/22  CASPIE Project Begins

8  3/1  Phytochemical Antioxidants with Potential Health Benefits in Foods

9  3/8  *A printed manual will be distributed in mid-February with details of the goals, procedures, and expectations.*

*<Spring Break>*

10  3/22  *Pre-lab, in-lab and post-lab assignments per session*  120 pts

11  3/29  *(6 at 18 pts each and 1 at 12 pts)*

12  4/5  

13  4/12  

14  4/19  Research Report due <br>Check-Out *(Goggles and proper lab attire are required.)*  55 pts

15  4/26  No lab *(Compensation for Evening Exams)*
Safety Policies for Chemistry Labs

Complying with safety regulations is simply a minimum requirement for being allowed to work and learn in a chemistry lab.

Compliance With the Safety Regulations is NOT a Matter of Personal Choice or Opinion.

The safety of everyone in the active learning environment of a lab is taken seriously and your failure to comply with the safety regulations will affect your grade.

You are expected to arrive on time, properly dressed and prepared for lab work when you arrive. If you arrive at lab more than 10 minutes late or improperly dressed, then you will be considered unprepared to do the lab work and will be asked to leave the lab. You will not get a grade for that lab and it will count as a failure-to-complete lab.

Safety Goggles You must wear appropriate and approved safety goggles (not safety glasses) in the laboratory at all times, including the day of checkout. You will be dismissed from lab and lose all credit for an experiment or lose your opportunity to check out if you do not wear your goggles as required. Safety goggles may be purchased at the local bookstores, the chemistry storeroom, or outside of WTHR 200 during the first week of the semester.

Appropriate Clothing Chemistry department regulations state that you must wear clothing in the laboratory that protects your skin from your neck to your ankles and feet when you are sitting, standing or reaching. Shoes that cover your feet entirely are required.

You are expected to arrive at lab properly dressed for lab work. You will be dismissed from lab and lose all credit for an experiment or lose your opportunity to check out if you do not wear acceptable clothing. Unacceptable clothing includes, but is not limited to: sleeveless or bare midriff tops, pants that are ripped or have holes in the fabric that expose your skin, shorts, short skirts, open-toed and/or open-heeled shoes and sandals (with or without socks).

Gloves Gloves serve two purposes: they protect your skin from potential contaminants and keep any potential contaminants inside the lab. You will be required to wear protective gloves for many lab activities. When you leave a lab, take the gloves off and throw them away. Get new gloves when you return to lab.

Contact Lenses Contact lens wearers are encouraged to wear glasses in the laboratory. If you wear contact lenses in the laboratory, you must inform your graduate instructor of this at the beginning of the semester.

Hair If your hair is longer than shoulder length you must tie it behind your head in order to avoid accidental contact with open flames or chemicals that might be on the lab bench. Rubber bands are available in the laboratory.

Food and Beverages You may not eat, drink, or bring food into the laboratory.

Electronics The only electronic equipment allowed in the lab is that which is being used for instruction.

Handling and Disposal of Hazardous Materials You will be required to follow the instructions printed in your lab manual or given to you by the graduate instructor or others for appropriate handling of hazardous materials.
CHEMISTRY 116-C POLICIES AND PROCEDURES, Spring 2007

Your CHM 116 professors are aware that chemistry can be difficult material for some people to learn. At the same time your professors understand that learning chemistry is not impossible and that a variety of different teaching and learning methods may assist with the learning process. In CHM 116 you will have the opportunity to learn individually, with partners and in groups in lectures, recitations, labs and outside of class study time. Experts indicate that to adequately learn new material in college, two (2) hours of effective study outside regularly scheduled class time each week per one (1) credit hour is required. CHM 116 is a 4-credit course so this suggests that eight (8) hours per week of effective study outside of regular class time is necessary to learn what the professors want you to learn. The department provides several sources of help for you in this process at no cost. These include the professors, the CHM 116 TAs and the Chemistry Resource Room. Purdue supports and provides Supplemental Instruction sessions.

DETERMINING YOUR COURSE GRADE

No extra credit will be available.

Each of the assigned course activities are worth the number of points listed below. Before course grades are finalized after the Final Exam the following scores will be dropped:

- Your lowest homework score will be dropped before homework scores are scaled to 104 pts
- Your lowest lab score for labs #2 - #6 will be dropped.
- Your lowest nine (9) lecture instruction scores (i.e., CPS points) will be dropped.

The total number of points (1200) for CHM 116-C are distributed as follows:

- WebCT Homework scaled to…………. 104 pts
- Lecture instruction…………………… 50 pts
- Surveys ………………………………… 10 pts
- Exams (3 at 150 pts each)…………… 450 pts
- Final Exam (comprehensive)……… 300 pts
- Lab Projects………………………… 286 pts
  - Weeks 1-6: Lab 1 + (best 4 of labs #2 - #6) = 11 pts + 4(25 pts) = 111 pts
  - Weeks 7-14: CASPIE project = 175 pts
    o Weekly assignments: 6 at 18 pts each and 1 at 12 pts = 120 pts
    o Lab report: 1 at 55 pts

After the Final Exam your course grade will be based on the 99th percentile score of total points as follows.

A: 0.90 x (99th percentile score)
B: 0.80 x (99th percentile score)
C: 0.70 x (99th percentile score)
D: 0.60 x (99th percentile score)
F: <0.60 x (99th percentile score) OR if you miss or fail to complete three (3) or more of the 13 scheduled lab projects without excused absences.

You will earn an automatic grade of “F” in CHEM 116 this semester if you:

- miss three (3) or more of the 13 scheduled laboratory sessions (weeks 1–13) without excused absences.

Or

- fail to satisfactorily complete three (3) or more laboratory projects with your group. Completion of a lab project includes: (a) attendance in lab, (b) participation in the laboratory work, (c) completion of weekly lab assignments (d) help with lab report preparation and (e) completion and timely submission of a satisfactory lab project report. Failure to submit a lab report or lab notebook pages counts as a failure-to-complete lab.
UNIVERSITY DEADLINES - Spring 2007

January 22, 5:00 PM: Last day to cancel (drop) a course without it appearing on your record.
February 5, 5:00 PM: Last day to cancel (drop) a course without a grade.
March 19, 5:00 PM: Last day to cancel (drop) a course (with a passing or failing grade).

ACADEMIC INTEGRITY

Your integrity is your greatest asset.

The professors in CHM 116 view academic dishonesty as a serious offense, so we hope that cheating never arises as a problem in this course. The Office of the Dean of Students publication, Academic Integrity: A Guide for Students, is available at http://www.purdue.edu/ODOS/publications.htm and is an excellent summary of expectations for Purdue students.

Consequences of academic dishonesty (that is, cheating) in CHM 116 can include a score of zero for that activity, a grade of “F” in the course, and a report to the Office of the Dean of Students.

Examples of academic dishonesty (Cheating) While the following list of examples of academic dishonesty is not complete, the examples are provided for your information. If you have any questions at all about permissible behavior, save yourself some grief and ask before acting.

- Copying or possessing an unauthorized crib (written or electronic) during an exam.
- Copying from another student’s exam. Allowing another student to copy from your exam.
- Using someone else’s clicker to record their attendance or enter answers for them. Letting someone else use your clicker.
- Copying lab data or lab report, giving your lab report to someone else to copy. This includes files on computer disks as well as paper copies.
- Changing data for a lab project to fit the perceived answer (that is, what you think the answer should be).
- Using someone else’s data in a report as if it were your own.
- Submitting a lab report or other work that you did not do.

ATTENDANCE/ABSENCES

We do NOT give make-up exams or labs. Absence forms are to be completed in BRWN 1144 for a lab or exam absence due to one of the reasons listed below.

The following will be the only acceptable reasons for missing a lab or exam.

- You have a serious, major medical illness requiring immediate, emergency medical attention. The course supervisor must be able to verify that you received medical attention for this serious illness.

- Death of an immediate family member. The course supervisor must be able to verify the death and your attendance at funeral services from the Dean of Students Office or other source. Complete an absence form in BRWN 1144 before leaving campus. Return with a memorial card or other verification for the date and location of the funeral or memorial services and take that to BRWN 1144.
A direct conflict with another exam, class, or required university activity. An absence form for this type of conflict must be completed with an attached verification letter at least one week (7 calendar days) before the conflict. Do this in BRWN 1144. We will try to accommodate legitimate conflicts but you will have to take care of the paperwork before the conflict. The excuses and paperwork will not be handled or considered after the conflict has occurred.

* Club activities will not be excused unless the activity is a professional activity directly associated with your major.

If you will miss more than two (2) labs due to NCAA athletics, PMO, band, or religious activities, you must provide documentation to the staff in BRWN 1144 and change your lab section by the end of week 3 of the semester. Otherwise you will get no credit for lab absences that are associated with these activities although with documentation, these zeros will not count as “failure to complete” labs.

If you miss an exam or lab for some reason that is not on the list above, i.e., an unexcused absence, that score will not be prorated.

**Reporting Absences** Telling your graduate instructor that you have missed or will miss a lab or exam is not sufficient. Absence forms must be completed in BRWN 1144.

**Conflicts You Know About Before a Lab or Exam.** An absence form for this type of conflict must be completed with an attached verification letter at least one week (7 calendar days) before the conflict in BRWN 1144. We will try to accommodate legitimate conflicts as stated in the previous paragraphs but the excuses and paper work will not be handled after the conflict has occurred.

**Emergencies.** If you miss a lab or exam due to a major medical emergency or death in your immediate family, then report your situation immediately to the General Chemistry Office, 49-45250. Go to the General Chemistry Office, BRWN 1144, and complete an absence form with verifying documentation within two weeks after the absence so that arrangements can be made to possibly prorate that lab or exam.

**DISABILITY ACCOMMODATIONS**

If you require accommodations to access course activities or materials, the accommodations must be described and approved by Adaptive Programs, Room 830, Young Hall, 302 Wood Street. To implement accommodations you must follow the instructions listed as “Responsibilities of the Student” in the letter prepared by Adaptive Programs. Give one copy of the accommodation letter to your professor, not your TA. Take another copy to the CHM 116 course supervisor in BRWN 1144 within the first three (3) weeks of the semester to discuss your accommodations. If you have accommodations identified and approved during the semester, you are encouraged to initiate a meeting with the CHM 116 course supervisor to discuss the accommodations within one (1) week of the date of the letter. Timely notification of the CHM 116 course supervisor is critical for timely implementation.
COURSE ACTIVITIES

Lectures
You will be responsible for any announcements or course changes that are made in all lectures. Lecture notes taken by a graduate instructor will be available in the Chemistry Resource Room, WTHR 117. Audio-recordings of lectures will be available at the Boilercast website [http://www.itap.purdue.edu/boilercast].

CPS response pads will be used to get your responses to a variety of questions and problems during lectures. The professors believe this process helps students learn. You will be allowed to use only the pad that belongs to you.

Cell phones, pagers, ipods or other electronic devices not being used for instruction purposes are distracting for all. Please respect your colleagues and turn off this equipment in lectures as well as in recitations and labs. Wireless devices interfere with the transmission of CPS response signals so you will need to turn off any wireless devices during lectures.

Exams
Attendance is required. We do not give make-up exams in CHM 116.

Before Exam I, you will receive an exam seat assignment for the entire semester. It will be posted on the CHM 116: Exam Seating WebCT course. Take your seat assignment, a calculator with exponential, logarithm and square root functions, and a #2 lead pencil with you to the exam. You may not share a calculator with another student.

- If you are absent from an exam, follow the procedures for reporting absences.
- Students will not be allowed to leave the examination area during the first 15 minutes of the scheduled exam times. Students may arrive late for the exam during this first 15-minute window. After the first 15 minutes, no one will be allowed to enter the examination area.
- If you arrive late for an exam (within the first 15-minute window) you will not receive additional time to complete the exam.

Hour Exams Three 60-minute, multiple-choice, evening exams will be in Elliott Hall of Music.

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam I</td>
<td>February 8 (Th)</td>
<td>7:00 pm - 8:00 pm</td>
<td>Elliott Hall of Music</td>
</tr>
<tr>
<td>Exam II</td>
<td>March 5 (M)</td>
<td>6:30 pm - 7:30 pm</td>
<td>Elliott Hall of Music</td>
</tr>
<tr>
<td>Exam III</td>
<td>April 16 (M)</td>
<td>7:00 pm - 8:00 pm</td>
<td>Elliott Hall of Music</td>
</tr>
<tr>
<td>Final Exam:</td>
<td>to be announced</td>
<td></td>
<td>Elliott Hall of Music</td>
</tr>
</tbody>
</table>

Wait until you know the date of the final exam before you make travel plans that might conflict with the exam. Final exams will not be rescheduled to accommodate your travel plans.

The final exam will be a two-hour exam. University policy on Final Exams states: “Students scheduled for more than two (final) examinations in one calendar day are entitled to reschedule any examination in excess of two... It is the responsibility of the student to make necessary arrangements before the last week of regularly scheduled classes.”
On-Line Homework
Assignments will be made and you will submit your answers on-line from the appropriate CHM 116 WebCT Vista course. You will have a maximum of two (2) attempts to complete each homework assignment and the higher score of the two attempts will be recorded as your score for that homework. On-line homework will generally be due on Fridays at 4:00 PM.

Deadlines for completing the on-line assignments will be listed on the WebCT Assessments page.

If you miss the posted homework deadline, you will not be given a time extension or exception. A score of “zero” will be recorded for that assignment.

Homework will be scored on-line so there will be no grading or regrading of homework by hand.

Recitation
You will be responsible for any information or problems that are done in these scheduled weekly sessions. These sessions provide you with the opportunity to ask questions and work with your graduate instructor and classmates in small groups. Recitation is not the time or place to begin working on your homework assignments. You will have time to ask questions and check your homework so take your homework printouts with you to recitation. However, 50 minutes is not sufficient time to answer all the questions that all students may have. If you have difficulties or have questions about certain problems, you should seek help during the CHM 116 TA office hours that are held in the WTHR 116 area.

Please show respect for your classmates and turn off cell phones and other electronic equipment that can be distracting to others during recitations.

Laboratories
CHM 116-C will have a lab program that involves you in a true chemistry-based food science research project developed by the Center for Authentic Science Practice in Education (CASPiE, see http://www.caspie.org/) during weeks 7 through 14 of the semester. After the first six weeks of traditional labs (which will give you an opportunity to polish your lab skills) you will work in a group of three to determine the presence and concentration of Phytochemical Antioxidants with Potential Health Benefits in Foods in a project of your own design.

One hour per week of optional Peer Led Team Learning (PLTL) sessions with two lab groups (six students) will be available during weeks 6 - 14. These sessions are designed to help you discover the nature of research, research record keeping, presenting the results of your research, etc. You and your group will set up a weekly time that fits your schedules to meet with your peer leader to discuss various aspects of the research process. Your peer leader can be a very helpful guide but will have no impact on your grade.

Attendance is required since CHM 116 is a laboratory course. You will not be able to make up a missed lab, but you will be responsible for the material covered in any lab you miss since questions based on the lab projects may appear on exams. If you miss a lab, follow the procedure for reporting absences.

You are expected to arrive on time, properly dressed for lab work and prepared when you arrive. If you arrive at lab more than 10 minutes late or improperly dressed then you will be considered unprepared to do the lab work and will be asked to leave the lab. You will not get a grade for that lab and it will count as a fail to complete lab.
Safety policies MUST be adhered to in the laboratories.
If you are dismissed from lab for violation of safety regulations or department lab dress code, you will not get a grade for that lab and it will be considered as an un-excused absence and as a fail to complete lab. See page 5 for the laboratory safety policies.

Lab Reports
Weeks 1 - 6
Laboratory reports will be due when you enter the lab and no later than the 10 minutes after the beginning of lab one week after lab work is done. Most lab work will be done in groups of three. All reports must be typed on one side of white, unlined paper. All graphs must be computer-generated using a spreadsheet program such as Microsoft EXCEL or other graphing program. Additional information about the format for lab reports is in your lab manual.

Grading Criteria for Lab Reports for Weeks 1 - 6
Your lab reports will be graded primarily on correctness and completeness. The following guidelines will apply.
- The report is complete.
- The report is organized correctly.
- The presentation is legible and logical. Headings and subheadings are used to identify or describe the contents of a particular section. Graphs and tables have titles to describe the contents. Sentences are complete.
- The data analysis and calculations have been done with the data your team collected during the lab period.
- The data analysis, including units of measurements and significant figures, are correct.
- Chemical terms and concepts have been used correctly throughout the report.
- Your conclusions and results are consistent with your data and calculations.

If any student(s) forfeits the responsibility of writing a report to other team members and those team members change or falsify data or plagiarize parts of the report, then ALL team members share the negative consequences associated with academic dishonesty.

Weeks 7-14
Grades for weeks 7 - 14 will be based on the contents of your lab notebook and a research report due on the day of checkout. Additional information about the goals, procedures and expectations will be given to you in a supplementary lab manual and materials. Optional Peer Led Team Learning (PLTL) meetings will also be available to assist you with the expectations of the CASPIE project.

Grading Criteria for Weeks 7 - 14
The Laboratory Notebook Research depends on a clear record of data, observations, calculations, ideas, plans, and tentative conclusions, all of which should be compiled in your laboratory notebook. Your notebook is a journal of your progress throughout the research project. While such records are primarily for personal use, a research notebook must also be organized in a way so that others can read it, understand your experiences (including your data, observations, and calculations), ideas, and reflections and be able to repeat your work based on the information in your notebook. Reproducibility of results is an important part of the research process, and is one of the ways that allows science to be done accurately and ethically.
There should be three sections for each CASPiE laboratory session in your notebook. Section I, the pre-lab, will be completed and examined by your TA prior to starting any experiments for that session. Section II is completed during the lab. Section III is finished after the lab session and should be ready for the TAs to examine at the beginning of the next session. Each page must have your name, date, session number, and activity description at the top. Each week, each section of the laboratory notebook will be graded and scaled to a total of six points (18 points per week except week 13).

Research Article The research article will be based on your research, and must include an introduction, an experimental section, a discussion of the research results, and conclusions reached. These reports should be between 4-6 pages, and will be due on the day of laboratory check-out. Late papers will not be accepted.

Grading Questions If you have a question about the score on any of your lab reports, first ask your graduate instructor for clarification. If the graduate instructor cannot answer your questions, you may take the graded lab report to the course supervisor in BRWN 1144 for possible regrading. You will need to do this within one (1) week (that is, 7 calendar days) after the graded paper has been returned to the class. Your work will have to have been typewritten or written in ink for a possible regrade. The course supervisor will regrade the entire paper, not just the part where you think an error has been made.

Late Lab Reports During the first six weeks, 50% of the maximum points, will be deducted for ALL team members. No laboratory reports will be accepted and graded beyond one week after the report is due. For a group lab report it is the group’s responsibility as a team to ensure that everyone whose name is on the report participated in preparing it.

Changing Sections A change in section requires the approval of the course supervisor in BRWN 1144. Because of the processes associated with assigned lab drawers, WebCT course enrollment and elinstruction we will not make a section change for students after week #3 of the semester. If you change sections after you check into a locker drawer, you must check out of your old locker drawer before checking into a drawer in your new section.

Lab Check-out
Dropping the Course If you drop CHM 116 after having checked into a lab drawer, it is your responsibility to check-out of your assigned drawer during the next scheduled lab period. If you do not check out immediately, then go to lab at the regularly scheduled starting time during week #15 and check out of your locker drawer.

Failure to Check-Out of Lab For anyone who does not check out of a locker drawer by the scheduled or designated time:
- his/her padlock will be cut (this may also happen for students who arrive late for lab in Week #15)
- he/she will be charged a $45 fee and
- he/she forfeits the right to determine the acceptability of all locker drawer equipment.
**SOURCES OF HELP FOR CHEMISTRY 116 STUDENTS**

**Professor**

You can make an appointment with the course professor. E-mail addresses (best way) and phone numbers are on the cover page of this packet of information.

**Graduate Instructors**

Your graduate instructor is the person who has the closest contact with you in this very large course. The graduate instructors in the Department of Chemistry are not just "a bunch of grad students." They are graduate students, all of whom have been through a training program in teaching and tutoring skills and some of them have several years' experience in teaching. If you are having a problem with some aspect(s) of the course, go first to your graduate instructor. He/she wants to help you and is available for consultation both at specific hours and by appointment. However, he/she is not going to "spoon-feed" chemistry to you.

**Office Hours**  Graduate instructors will hold their weekly office hour in WTHR 116. There will be graduate instructors available 40–50 hours each week to answer questions and provide help in learning chemistry. A schedule of these office hours will be posted during Week 2 of the semester.

**Course Supervisor**

The course supervisor, located in the General Chemistry Office (BRWN 1144) will handle policy issues or problems in the course.

**Supplemental Instruction (SI) Sessions**

[www.cla.purdue.edu/asc](http://www.cla.purdue.edu/asc)

These sessions are conducted by the staff and student leaders through the Academic Success Center. Announcements about these sessions will be made at the beginning of the semester in the lectures. The schedule of SI sessions can be found by clicking on the SI link on the Academic Success Center Website: [www.cla.purdue.edu/asc](http://www.cla.purdue.edu/asc)

**CHM 116 Website**


The CHM 116 website has information that might be of interest to people such as academic advisors, parents, as well as you. A downloadable file of this packet will be available from that site.

**Chemistry Resource Room**

The Chemistry Resource Room (WTHR 117) provides a place to study and various kinds of help for all undergraduate chemistry students. The resources include:

- Free help and tutoring from the staff assigned to this area
- A variety of course materials (e.g., lecture notes, exam answers, the course text, and lab manuals)
- Numerous audiovisual and autotutorial programs on chemistry

A student ID card is required to check out most of the materials in the Chemistry Resource Room.
Hints and Facts About Using WebCT for On-Line Homework

1. Log on to Purdue's WebCT server: http://www.purdue.edu/ecourses/

2. Use your User Name (that is, career account ID) and password to log on. (If you do not have a password, take your Purdue student ID to STEW G68 and get one.)

3. Click on your CHM 116 course title.

4. Click on the icon labeled Homework and select the appropriate homework set when the new page opens.

   It might be easiest to print out the assignment, work the problems on paper, then return to WebCT to enter your answers. The program remembers exactly which problems you were assigned.

6. Answer the questions in the spaces provided then click Save Answer. If you do not click Save Answer, your answer will not be recorded and cannot be graded.

7. You can do some or all of the homework at any one time. If you only want to do some of the homework:
   (a) click on Save Answer.
   (b) DO NOT click Finish.
   (c) Click on the X in the top right of the screen to close. You can return to a homework set provided you do not go past the time deadline.

8. When you are finished with the entire homework assignment, click Finish, then OK and View Results.

9. As described, if you are not happy with your homework score, you can repeat it.

10. Other Information About WebCT
    (a) All button functions on WebCT are single click functions. Do NOT double click or you might cancel the command from the first click.

(b) Terminology: WebCT does not understand homework. In spite of the fact that we call the assignments "homework", we are using the assessment function of WebCT. All of the help and comments provided refer to assessments but, in fact, this is your homework.

(c) Close the browser window or logout when you are finished with a homework session. If you don't, the next computer user can access your WebCT course and homework account.

(d) Make sure that you open a new browser window when you access WebCT. If you access WebCT from another student's open browser window after they have used WebCT, you will get their assignment and no grade will be recorded for you.

(e) As with any electronic communication, the WebCT server may get overloaded and have a slow response time when everyone tries to finish their homework an hour or two before a deadline.

(f) If you work from a personal computer, you may experience difficulties with information transmission, viruses on your computer, browser incompatibility, etc.

   The ITaP Help Desk can be reached at 494-4000 for technical help.

(g) Instructions for entering answers are available via the "Answer Format" icon on your CHM 116 WebCT course home page.

Answers to the homework questions will be released several days after the deadline has passed.
Blank page
eInstruction Classroom Performance System (CPS$_{RF}^1$)

CPS Response Pad Registration
Directions for Students

1. Log into your WebCT Vista account ([http://www.purdue.edu/ecourses/](http://www.purdue.edu/ecourses/)). Select the class using the CPS response pads.

2. Open the CPS registration tool for your course (Note: link names may vary between courses). Select one of the following two options based on your response pad (Gen1 or Gen2):

   - Remove the battery cover from the back of your CPS response pad, and note the seven character serial number located below your battery holder. The serial number always begins with the letter “r.”

   - Press the power button to activate the Gen2 response pad and note the seven character serial number at the lower-left corner of the LCD screen. The serial number always begins with the letter “r.”

![Example: S/N Location Serial Number “r000d51”](image1)

![Example: S/N Location Serial Number “r100252”](image2)

3. Enter this serial number into the appropriate field on the registration page. Note: If you have not already chosen an eInstruction password, do so now. Purdue recommends that you NOT use your Purdue Career Account username and password for this registration. Once the registration has been completed, you will be sent to a webpage confirming your registration. Please record your CPS response pad ID number for later use.

If you have questions:
- Please visit the ITaP eInstruction website at [http://www.itap.purdue.edu/ilt/einstruction/](http://www.itap.purdue.edu/ilt/einstruction/)
- Call the ITaP Customer Service Center at 49-44000, or
- Send email to itap@purdue.edu. Make sure to include “eInstruction” in the subject.
REPLACING DEFECTIVE RESPONSE PADS
Return the defective pad to the bookstore. Then login to the CPSOnline site at http://www.einstruction.com.
Click the Students link at the top left of the page, log into your account and click Manage My Pads in their Account Information screen. If you have not enrolled in any CPSOnline classes yet you can delete the pad from your account.

If you have already enrolled in one or more CPSOnline classes, you can click Remove to remove the pad from a class.

If you have enrolled the pad in more than one CPSOnline class, you must remove the defective pad from each class.

Manage my Pads

Then click Add a Pad, input the serial number and click the Add Pad button.

Please enter the serial number for the pad you wish to add to your account below.

Then you must click the Back to Manage My Pads link, click Link a Pad with a Class and link the pad to your CPSOnline classes.

Link a Pad With a Class

Please choose a class below. Then choose the serial number of the pad you wish to use in that class and click Link Pads.

Classes:

Serial Number(s):
Using the Generation 1 CPS Rf Pad

Alphanumeric – These buttons (0-9 and A-J) are used to perform various functions including answering multiple choice and numeric questions.

- +/- Press this button to make a response negative. If you press this button twice, your answer will be out of the acceptable range of answers and you will have to re-enter your answer.
- Use this button to add decimals to numeric answers.
- Join Press this button followed by the class' channel number and Send to join the class.
- * Press this button followed by the Send button in SMA to scroll through the questions in your lesson. Press the left or right arrow key to stop scrolling.
- C Press this button to clear your answer and start again. Pressing this button will not affect answers that have already been sent.
- These buttons are used in SMA mode to move to the previous or next question, respectively.
- Send This button is used to send responses.

Arriving late to a class

If you arrive late and see the Engage Bar displayed on the screen, go ahead and join the class (press the Join button then enter the Channel Number then press Send). Any time you see the channel number displayed you may join.

If you arrive late to class after the instructor has started a CPS assessment and the other students have joined, you may still join the class. Your instructor will have to click the Join button in the question display to allow you to join. In teacher-managed assessments the Join button is only available after a question has ended. You will not be able to respond to questions that were asked earlier. In student-managed assessments, you may take the entire assessment after joining late. In both cases, you will know you have joined the CPS session successfully when the green light on your response pad flashes.

In multiple-version student-managed assessments, late-joiners will automatically be assigned Version 1. Make sure this is the version you are given.
Your CPS pad has two LED’s (lights) on the front panel: a green one and a red one. All of the information about what your pad is doing is given to you by a series of codes (blinking, etc) using these lights. Therefore, you should familiarize yourself with what these lights do. You need to watch these lights whenever you are using your pad in class so that you know that your answer was sent and received.

<table>
<thead>
<tr>
<th>User Actions</th>
<th>Lights</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Turn the response pad on</strong> by holding down the Power button until both lights blink.</td>
<td>Both lights blink once. The red light continues to blink until you join class.</td>
</tr>
<tr>
<td><strong>Join your class by pressing Join, your class’ channel number, and Send.</strong></td>
<td>When you press Join, the red light will stay on. Each digit pressed after Join will be acknowledged by the red light flashing off. When you press Send, the red light will blink quickly until your response is detected. Once your response is detected and you are joined to the class, the green light will be solid for 5 seconds and then blink very faintly as long as you remain joined to the class.</td>
</tr>
<tr>
<td><strong>Respond to a question by entering your answer and pressing Send.</strong></td>
<td>Watch the red light, which will blink with each key press, to ensure that your answer is entered as intended. The green and red lights blink simultaneously until your response is received. Once your response is received, the green light will be solid for 5 seconds to indicate your response was received.</td>
</tr>
<tr>
<td><strong>Confirm an answer (optional) by reentering your answer and pressing Send.</strong></td>
<td>If your confirmation answer is the same as your original answer, the green light will be solid for 5 seconds. If your response differs, the red light will be solid for 5 seconds. The LED light states for confirming an answer do not apply in SMA™ mode. In this mode, watch your pad number on the onscreen feedback grid. Your number will flash green if your confirmation answer is the same as your original answer, and flash yellow if it differs.</td>
</tr>
<tr>
<td><strong>Turn your pad off by holding the Power button down for at least 4 seconds.</strong></td>
<td>As you hold the Power button down, both lights will stay on for a few seconds and then go off, signifying that the pad is off. The pad will turn off automatically if it is out of the range of the receiver for 5 minutes.</td>
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</tbody>
</table>

* SMA stands for Student Managed Assessment. In this mode, students move through lessons at their own pace. Use the onscreen feedback grid to determine which questions you have answered.