

# Fall 2019 Chemistry 221 with Dr. Michael A. Russell

CH 221, Mt. Hood Community College, Gresham, Oregon, USA 97030

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Office Hours: M 10 AM - 12, W 10 AM - 1 PM and By Appointment only 8 AM MWF

Chemistry 221 website:  
<http://mhchem.org/221>



## Required Materials:

"Chemistry" by The OpenStax College (978-1-938168-39-0),

available here for free: <http://mhchem.org/text/OpenStaxChem.pdf>

The Chemistry 221 Companion (MHCC Bookstore or CH 221 website)

Scientific calculator (such as the TI-89, ClassPad 330, etc.)

Bound Laboratory Notebook (Must have by first day of lab)

Five (5) Scantron Sheets for exams (50 Questions on *each side*)

Safety goggles for lab

iClicker 2 (ISBN 978-1429280471) Recommended for Lecture

**Course Description:** This course offers the fundamental basis of chemistry for science, pre-professional, chemistry and engineering majors. A strong emphasis is placed on a mathematical approach. CH 221 covers nomenclature, stoichiometry, thermochemistry and introductory chemical bonding. **Prerequisites:** RD090, WR090, each with a grade of "C" or better; or placement above stated course levels. Co-requisite of MTH111 or placement above stated course level. CH151 highly recommended.

**Course Philosophy:** To be successful, students enrolled in a 200 level chemistry course should complete all assignments before coming to class, attend classes regularly, participate in discussions, and think critically. Homework assignments represent the *minimum* requirement for understanding the principles of chemistry. It is assumed that A and B students will perform enough *unassigned* exercises to master key concepts. I encourage questions in this class, and I expect a considerable amount of work. If you contact me by email, I will respond to you normally within 24 hours; phone messages will be acted upon as soon as possible.

**The Honor Principle:** All students will be expected to behave with the highest moral and academic integrity while enrolled in this class. Plagiarism, cheating or sharing information on tests or laboratory reports, disruptive behavior, and other related offenses will be dealt with according to the directives stated in the current *Mt. Hood Community College Student Guide*.

<b>Grading:</b>			
	Midterm Exams (2 total, 130 points each)	260 points	26% of total points
	Quizzes (6 total, lowest quiz dropped, 20 points each)	100 points	10%
	Lecture Final Exam	180 points	18%
	Laboratory Final Exam	100 points	10%
	Class Presentation	100 points	10%
	Problem sets, worksheets, lab notebook, reserve CP topic	60 points	6%
	Nine lab experiments (20 points each)	180 points	18%
	Lab Completion Bonus	<u>20 points</u>	<u>2%</u>
	<b>Total points:</b>	<b>1000 points</b>	<b>100%</b>

**Tentative grading distribution:** A: 89-100% B: 78-88% C: 65-77% D: 55-64% F: less than 55%  
Opportunities for extra credit are available and explained in the "Extra-Credit Guide" handout.

**Exams and Quizzes** will be held in the recitation portion of lab. No make-up quizzes will be given. If you need to miss an exam due to illness or personal emergency, call and leave a message to ensure a make-up exam. Failure to call results in a failed exam. Note that **cell phones are not allowed as a calculator substitute**, and using a cell phone results in an immediate grade of zero. Each student will also give a **Class Presentation** this term; for more information, see the "Class Presentations FAQ" handout.

**Laboratory Safety and Etiquette** rules can be found in the lab packet for this course and on the website. Information regarding **lab reports**, the mandatory **lab notebook**, the **lab completion bonus** and **missed lab sessions** can be found in the lab packet and on the course website as well. Lab reports must be submitted as hard "printed" copies for full credit.

**Problem Sets and Worksheets:** We will be using problem sets found in the CH 221 Companion, available at the bookstore. All problems should be attempted prior to class (we will be discussing them during recitation), and arriving late to a problem set session will invoke a point penalty. Nameless or late problem sets and worksheets will also receive a point penalty. Details regarding problem set and worksheet grading will be discussed during the first recitation of the term.

Note that **sessions may be recorded** to maximize the learning resources available to the student population. See the "College Information" guide on our website (found under "Class Information") for more detail.

## "What's Due This Week" Schedule for CH 221 Fall 2019

*Problem Sets and Labs are found in the Chemistry 221 Companion and on our website (<http://mhchem.org/221>)*

*Dates given below represent laboratory sessions that generally meet in AC 2501 and move to AC 2507.*

<u>Week</u>	<u>Dates</u>	<u>Lab Assignment</u>
1	9/24 - 9/26	Introduction to the course Begin "Identification of an Unknown Compound" Lab - <b>goggles</b> required
2	10/1 - 10/3	Begin "Density of Liquids and Solids" Lab Due: <u>Problem set #1</u> Chapter 1 Lab due: "Identification of an Unknown Compound" ( <u>Lab #1</u> ) Take <u>Quiz #1</u>
3	10/8 - 10/10	Begin "Chemical Nomenclature and Formula Writing" Lab Due: <u>Problem set #2</u> Chapter 2 and Chapter 3.1 (the mole) Lab Due: "Density of Liquids and Solids" ( <u>Lab #2</u> ) Take <u>Quiz #2</u>
4	10/15 - 10/17	Begin "Determination of an Empirical Formula" Lab - <b>goggles</b> required Due: <u>Problem set #3</u> Chapter 2 and Chapter 3 (3.1-3.2) Lab Due: "Chemical Nomenclature and Formula Writing" ( <u>Lab #3</u> ) Take <u>Quiz #3</u> <b>October 18, 9 AM:</b> Last chance to reserve a Class Presentation element
5	10/22 - 10/24	<b>EXAM #1</b> - Chapters 1, 2 & Chapter 3 (up to 3.2); bring scantron, calculator, pencil Begin "Percent Potassium Chlorate in a Mixture" Lab - <b>goggles</b> required Lab Due: "Determination of an Empirical Formula" ( <u>Lab #4</u> ) Worksheet Due: "Exam Prep I"
6	10/29 - 10/31	Begin "Net Ionic Reactions in Aqueous Solutions" Lab - <b>goggles</b> required Due: <u>Problem set #4</u> Chapter 4 Lab due: "Percent Potassium Chlorate in a Mixture" ( <u>Lab #5</u> ) Take <u>Quiz #4</u>
7	11/5 - 11/7	Begin "Determination of an Unknown Chloride" Lab - <b>goggles</b> required Due: <u>Problem set #5</u> Chapter 3 (3.3 – 3.4) and Chapter 5 Lab due: "Net Ionic Reactions in Aqueous Solutions" ( <u>Lab #6</u> ) Take <u>Quiz #5</u> Due: Class Presentation Rough Draft Paper <b>November 8:</b> Last day to drop or change grade status
8	11/12 - 11/14	<b>EXAM #2</b> - Chapters 3, 4 & 5; bring scantron, calculator, pencil Begin "Calorimetry" Lab - <b>goggles</b> required Lab Due: "Determination of an Unknown Chloride" ( <u>Lab #7</u> ) Worksheet Due: "Exam Prep II"
9	11/19 - 11/21	<b>CLASS PRESENTATIONS</b> - final paper due at presentation Lab due: "Calorimetry" ( <u>Lab #8</u> )
10	11/26 – 11/28	No labs - Thanksgiving! ☺
11	12/3 - 12/5	Begin "The Atomic Spectrum of Hydrogen" Lab - due at end of lab, <b>lab notebook due</b> ( <u>Lab #9</u> ) Due: <u>Problem set #6</u> Chapter 6 Take <u>Quiz #6</u>
12	12/11	<b>LECTURE FINAL</b> (8:45 AM, AC 1303, date tentative; Take Home Final and "Final Exam Prep" worksheet due; bring scantron, calculator, pencil)
	12/10 - 12/11	<b>LAB FINAL</b> (Times and location to be announced; bring calculator, pencil)

*All dates subject to change, especially during finals week. Class lectures generally meet at 9 AM in AC 1303 on MWF.*

*Attendance during all laboratory sessions is mandatory. Attendance during class lectures is recommended.*

# Getting Started in Chemistry 221

**Welcome to Chemistry 221!** I am glad to have you enrolled in CH 221! Here are some hints on how to get started in the class:

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- First, **know that I am here to help you succeed in this class.** If you have any questions, please email me (mike.russell@mhcc.edu), give me a call (503.491.7348) or stop by my office (AC 2568) during office hours. I normally respond to student inquiries within 24 hours on email, and I return calls the next time I am in my office.
- All relevant assignments (problem sets, papers, etc.) as well as assessments (quizzes, exams, etc.) will be due / occur during recitation (the beginning of your lab period.) If this is a **hybrid** or **web-based (H1)** class, we will only meet "face to face" during the lab period. All other students will meet "face to face" during both the lab period and during the lecture periods.
- The "**What's Due This Week**" **Schedule for CH 221** located on page 2 of your syllabus **lists all the problem set due dates, assignment deadlines, labs performed, exam/quiz dates, and related information for this term.** You can plan your term by referencing this handout.
- **Join the *mhchem* mailing list** if you are not already a member. *mhchem* is a mailing list for students in CH 221, CH 222 and CH 223 at Mt. Hood Community College. Over the course of the year, you will receive various pieces of information, events, announcements, and more via *mhchem*.

To join *mhchem*, send your Web browser to the following address:

**<http://mhchem.org/mhchem>**

Enter your **email address** and **name**, and then press the **Subscribe** button; after confirmation, you will be a part of *mhchem*.

- The **Chemistry 221 website** is worth exploring. The Chemistry 221 website has a host of learning opportunities waiting for you. You can download and/or print copies of the syllabus, lecture notes, labs, quiz answers, and more; plus there are opportunities for extra credit available. To get started, send your web browser to

**<http://mhchem.org/221>**

You should see the CH 221 website on your screen.

- Check out the **Chemistry 221 Chapter Guides** by selecting "**Chapter Guides**" from the upper left hand corner of the CH 221 website. The Chapter Guides offer a detailed approach for studying the course material through a series of lessons. **Read Lesson Zero**, the "Intro to the Chapter Guides System," to understand how they work.
- Start thinking about a **Class Presentation Topic**. You will be giving a five minute presentation this term on an **element**, and you must reserve your element choice with me. A written paper also accompanies the presentation on your element. To reserve your element, send your web browser here:

**<http://mhchem.org/cp221>**

The "**Class Presentations FAQ**" (available in the syllabus or here: **<http://mhchem.org/cp221info>**) has more information.

- Obtain the **Chemistry 221 Companion** from the **MHCC Bookstore** (<http://www.bookstore.mhcc.edu/>) *or* from the **CH 221 website**. The "Companion" contains all the problem sets, labs, lecture notes, and more that you will need this term.
- The **Chemistry 221 Textbook** is **free** and **legal to download** from our website: **<http://mhchem.org/text/OpenStaxChem.pdf>**
- Many opportunities for **extra credit** exist in this class.... see the Extra Credit Guide for more information: **<http://mhchem.org/xc>**
- You can **download** the entire **Microsoft Office** suite of programs (Word, Excel, PowerPoint, etc.) **for free**... see this link for information: **<https://mhcc.edu/OfficeInstall/>**

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Again, welcome to Chemistry 221! Let me know if I can make your learning experience better in any way, and I look forward to working with you this term! Peace, Dr. Michael Russell (mike.russell@mhcc.edu, 503.491.7348, AC 2568)

## Staying Connected in Chemistry 222 This Quarter

Success in Chemistry 222 often depends on staying connected with the flow of the course... here are some suggestions on how to be aware of what is happening each week:

- Above all else **join the *MhChem* email mailing list**. The email list sends out messages about once per week informing you what will be due, links to handouts, and more. To sign up, go to <http://mhchem.org/mhchem>
- Facebook fans can stay connected by befriending "**MhChem Mhcc Russell**" on Facebook. This "Facebook friend" will include links to all of the podcasts, quiz answers, and *MhChem* messages sent each week. To request friendship, go here: <http://facebook.com/mhchem> (Note that Facebook messages can be sent to your cell phone if desired... ☺)
- Fans of **Twitter** can stay connected by following @mhchem. New podcasts, quiz answers, and *MhChem* messages will be sent to Twitter, keeping you up to date and informed about class activities. To follow, go here: <http://twitter.com/mhchem> (Note that Twitter messages can be sent to your cell phone if desired... ☺)

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### Additional Syllabus Materials for Chemistry 222 Available on the Internet

Some or all of these materials might prove useful to you in our class. All of them are available on the Chemistry 222 website under "Class Information".

To access these materials (and more!), go to our website (<http://mhchem.org/222>) and select "Class Information" from the upper left corner. Additional materials include:

- The "**How to Join the Chemistry at MHCC Podcast**" guide, which includes step-by-step instructions for joining the class lecture Podcast for this quarter. It also gives information on accessing closed-captions, when available.
- The **Extra-Credit Guide** - a helpful guide containing some of the extra credit options available to you in this course
- The **Discus Guide** - a visual step-by-step guide that helps the new user join the Discus discussion board with tips on how to post comments, etc.
- **Learning Outcomes for CH 222** - a list of "what you will learn" this quarter
- **MHCC College Information** - key information that you, as a student at Mt. Hood Community College, might wish to know, including the **Student Code of Conduct** and **Internet Privacy Policy**
- A **Printable Periodic Table** – this periodic table from Webelements.com will certainly be useful in this course, and you will be able to use this type of periodic table on exams and quizzes.

In addition, the website has a plethora of other "goodies" which may be of assistance to you throughout this quarter... feel free to browse, and if you have questions, please do not hesitate to contact me.

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Have a great quarter! Peace,  
Michael A. Russell, Ph.D. (mike.russell@mhcc.edu, (503) 491-7348, AC 2568 (office on campus))

# CH 221 CLASS PRESENTATIONS FAQ

FAQ = Frequently Asked Questions

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**When:** November 19 (Tuesday), November 20 (Wednesday) or November 21 (Thursday)

**What:** A chance to share knowledge of the elements with your classmates and the MHCC community

**Who:** *Everyone* enrolled in CH 221 (All Sections)

**What topic should I pick?** For CH 221, the topic will be **elements**. Pick an element you find interesting and write a report on the topic. Since there are over 100 elements, every student must pick a different element. **Reserve** your element with Dr. Russell using the online form at <http://mhchem.org/cp221>

Once your element has been chosen, begin researching interesting information on the element using the library, internet, etc. You will be preparing a paper on the element and presenting your work to the class in a short (five minute) presentation.

If you need to change your class presentation topic after the fourth week of class for any reason you will be penalized 20 points; hence, it's best to reserve an element early and start researching promptly. Also, if you still have not reserved an element by the end of the sixth week, you will be penalized 20 points for tardiness.

**What should I know when writing the paper?** Prepare a paper that is at least **five full pages** of text on your reserved element. Diagrams, pictures, and other graphics are wonderful, but you will need five full pages of writing for complete credit.

The paper should include a separate **cover sheet** with the title of your presentation and your name. The paper must be neat, typed, referenced, and interesting to read; spelling and grammar will count. The paper must use a "**reasonable**" font and font size (Times New Roman, Arial, etc. with size 12 or less); in addition, use **1" margins or less** (*I will measure!*) and **no more than "one and a half" spaced type** (less than double spaced.) If unsure, ask the instructor.

The paper should also include a separate page at the end with a **list of references**. References within the paper and at the end should adhere to the "**Class Presentations Citation Guide**" (*found here: <http://mhchem.org/cg>*) For an *example* paper, see: <http://mhchem.org/expaper>

**What is a peer reviewed scientific article?** An important aspect of this assignment is to ensure scientific relevancy. To this end, **find two peer reviewed scientific articles published within the last ten years** that include a reference to your element. **Include the abstracts of these papers with your final Class Presentation paper.**

**How do I find my two peer reviewed scientific articles?** A sure-fire way to access **peer-reviewed scientific articles** is through the MHCC library's article databases. Go here (<https://libguides.mhcc.edu/chemistryguide> - you may have to enter your MyMHCC username and password if you are off campus). Select **Articles** (on the left), then select **ScienceDirect College Edition** (under "Chemistry Databases") or **Academic Search Complete** (under "General Databases"), then search for your topic. **Remember**, your article citation should include the author(s), year of publication, journal title, title of paper, page number(s), volume of journal, etc. and you will need to include the abstract from the peer reviewed article (but not the entire article!) in your report.

Once you conduct a search for your presentation topic, you will likely have a mix of citation/abstract-only and citation/abstract + full-text (whole article) results. You **only** need the abstract for your paper - do not include the full article. Here is an **example** of a **peer-reviewed scientific paper with an abstract**: <http://mhchem.org/abstr>

**Tell me about the Class Presentation Rough Draft Paper** During the seventh week, you will be submitting a rough draft of your class presentation paper to the instructor. Ideally this will be the paper in a mostly complete format, but at the very least, two typed pages of text should be submitted.

The rough draft does not require a cover sheet or a separate list of references. However, you should have at least one peer reviewed scientific paper ready to submit with your rough draft. **Use the Rough Draft Class Presentation form** when submitting to avoid a five-point penalty (<http://mhchem.org/rd1>) The Class Presentation Rough Draft Paper is worth 20 points (out of the 100 points total.)

*What should I know when preparing for the presentation?* You will present a five-minute **presentation** on your chosen subject to the class and anyone who wishes to attend. The presentation must be well prepared and interesting; sloppy preparation shows in the presentation portion. Students can use videos, presentation software (PowerPoint, etc.), posters and chalk to enhance their presentation. Presentation software users will be limited to a maximum of six slides; more invokes a penalty.

Please note that using your paper (or a *copy* of your paper) during the presentation will result in a ten point penalty. This will prevent you from "reading" your presentation to the audience.

*How will I be graded?* There are 100 points total for this project. 40 points will reflect the work presented in the paper, 40 points will reflect the work done in the presentation and 20 points will be given for completing the Rough Draft Class Presentation paper.

In addition, failure to turn in the "Class Presentation Reviewer Guide" to the instructor at the end of the day of presentations will result in a ten-point penalty. You will be completing the Reviewer Guide while others are giving their presentations. If curious, you can view this guide on our website (<http://mhchem.org/cp221info>).

Late class presentation papers will result in a five-point penalty *per day*.

*Plagiarism discovered from any source will result in a total Class Presentation grade of zero.*

A sample **Class Presentation Grading Rubric** is available for viewing on the CH 221 website (<http://mhchem.org/cgr1>) The rubric will allow you to look at the items deemed most important when grading your Class Presentation.

Note that your **attendance** is required on the day of presentations, and if you are not present for at least 95% of your normally scheduled lab period, you will lose half of your assigned grade.

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*How do I get started?* Step 1: *Reserve your Class Presentation Element*

Decide on some elements that interest you, then email the instructor or complete the online web form to reserve your element: **<http://mhchem.org/cp221>**

You should receive a response from Dr. Russell within 48 hours after the beginning of the second week of class; if you do not, email him directly at [mike.russell@mhcc.edu](mailto:mike.russell@mhcc.edu). Be sure to include alternate elements in case your first choice has already been claimed; he can also pick one for you if you are uncertain which element to pick. Reserve your class presentation element by the end of the fourth week, **October 18 at 9 AM**. You can see which elements are still available here: **<http://mhchem.org/221av>**

Step 2: *Turn in the Class Presentation Rough Draft Paper*

The Class Presentation Rough Draft paper should include at least two typed pages and one peer reviewed scientific article using the handout (<http://mhchem.org/rd1>) at the beginning of your recitation period: **November 5 (Tuesday), November 6 (Wednesday) or November 7 (Thursday)**

Step 3: *Give the Class Presentation and turn in your final Class Presentation paper*

At the time of your Class Presentation, turn in your final Class Presentation paper (with copies of the abstracts of your two peer reviewed scientific papers on separate pieces of paper in proper citation format and give your class presentation during the following lab period: **November 19 (Tuesday), November 20 (Wednesday) or November 21 (Thursday)**.

Before you present and submit your paper, check out the reminders contained within the "**Class Presentation 'Last Minute' Checklist**", found here: <http://mhchem.org/cpcs> Note that you must both present your work and submit your paper to receive any points on this assignment. Finally, the MHCC Librarians keep a webpage devoted to chemistry... it might be worth viewing as a research tool, and it is found here: <http://mhchem.org/libchem>

If you have any questions, see this site (<http://mhchem.org/cp221info>) or contact the instructor.

*A "Message in a Bottle" to the CH 221 Fall 2019 class from the CH 223 Spring 2019 class*

I'll start off by saying that you've made a great choice taking Dr. Russel's chem class. He's such a fun, engaging and encouraging dude. I'm totally gonna miss him next year! The optional lecture style worked well for my schedule; but I have to warn you that if you miss a lecture, try to watch it as close to when it's posted as possible. Come the night before class and you realize you have 3+ hours of lecture to watch plus a lab report and a problem set, it's not a good moment. Spreading work out along the week between labs is the best way to succeed in this class. Another warning: have your routine and good study habits well-established by CH223. The course gets progressively more difficult, so if you don't have it down it'll be way harder to maintain a good grade. You can do this! Chemistry is so much fun!

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One thing I would have done differently if I were to take this class again is to do all the extra credit!!! It's a great way to earn extra points and also good practice. Also don't be afraid to reach out for help. Dr. Russell will help you out whenever he can. Also utilize the other people in your class. There's strength in numbers and it helps a lot to bounce ideas off of other people in your class.

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I was one of the second language students in Dr. Russell's class. He is the most wonderful professor, you will learn a lot of good material if you doing the problem set and other work he provides online, be on time and forget party and friends. Add a lot of note in your calculator before the exam night. Please practice the exam or quiz more than one time to finish that on time on the exam day because he does not give you extra time to finish it. I want to share with you after I left my home country, I really looking for respect and close friend which I had in my country, unfortunately, it was really hard for me to find it, finally, I found him as a good friend and wonderful instructor. we all know Students have a lot of interest in dealing with them in the form of a respectable person and they feel more satisfied. Dr. Russel did a perfect job and attracted my attention that how nice and respectful person is he. I very respect him and always appreciate his behavior with students.

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Here are some suggestions for future students. 1) Don't be afraid to ask for help, whether it's from another student, a tutor, or Dr. Russell. 2) Go to the tutoring center even if it's just to sit there and do homework. Questions will come up and then you will have tutors and other students available to help you. 3) Find the time to get together with other students. Talking about the coursework can be very helpful. Sometimes it just takes someone else's explanation for you to understand the material. 4) Do the practice quizzes and exams. 5) Khan academy can be a very helpful outside resource. 6) Chemistry is not easy, so don't be hard on yourself. If you show up and do the work, you will do well in the class. 7) Do as much extra credit as you're able to. You will have more exposure to the material and might even have a slight boost in your grade! 8) Get enough sleep, seriously. 9) Have fun with it. There is an interesting topic in chemistry for everyone. Find it and let it be your driving force. 10) Drink water and eat your vegetables. ☺

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Chemistry is a fun and challenging class. It takes hard work and good studying skills to do good in this class. Take advantage of the supplementary materials that are available to you. Looking over study guides, concept guides and chapter reviews can be very helpful. Also, don't forget to study the practice quizzes and exams. If you take this advise you should have a successful chemistry series ahead of you!

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In this class what worked for me best was studying day by day and going to office hours and the tutoring center. I wished that I would've spent more time fully understanding the concepts learned. Some study tips I recommend to do is going though practice problems to help you solve them. When you practice different equations it helps you familiarize yourself with the topics discussed in class. I also recommend to make sure you understand the lab questions! Remember, its not how smart you are, its the amount of work and effort you choose to put in the class!

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Hello Student, taking the chemistry sequence is hard for anyone but dr Russell had made this year wonderful. He offers a lot of extra credit which I never did and I regret, so I recommend you take advantage of all the extra credit he offers. secondly, I recommend buying the Companion because the sample exams and quizzes are very similar to the actual exam he gives. lastly, I recommend going to the tutoring center which is located above the library and get help with your exams, homework, labs, and quizzes. I hope you take my advice, good luck.

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Taking the practice quizzes and practice exams in the back of companion help prepare you for the actual quizzes and exams. I definitely did better on quizzes when I took the practice quiz before class. It is also very beneficial to makes friends in the class to study with and check your work with.

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This class will be challenging but I'm sure that you will have a lot of fun. Something that I would have to say helps a lot is to make sure to take the time to talk to Russell he genuinely cares and he will be the best bet for you to do the best you can. Ask all the question you have even if you think they are dumb. Also make some friends that will help you when you're having a melt down over the smallest thing. This class is a lot of fun it takes sometime but at the end it will be worth it. Hope you have a GOOD term!

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I want to preface this with... don't be overwhelmed!! Looking at the thick pages of the companion most likely in front of you for the first time can be very daunting. Realize now that most of it is study tools (props to Dr. R) !! I would recommend organizing it in a binder with tabs so you really see what resources you have at hand. Now onto the tips! I, personally, am so excited you chose Dr. Russel as your teacher!! The main thing I want to share is what an awesome resource he is. It took me a full term with him to actually realize this and I wish I would've asked him for his help earlier on. He is very patient and doesn't make you feel like any question is dumb like other professors can/ probably have. Another thing I want to pass on is make sure you attend/watch his lectures online! If you miss one, you'll more than likely be lost. He's great about putting them online so it's very easy to re-watch if you're stuck on anything (especially if you're like me and are half awake at 8 or 9 in the morning). Trust me on this, especially when compared to the book and even online resources, his teaching style makes it much easier to comprehend the topics. You'll have a quiz mostly every week and I would recommend doing the practice quizzes before your recitation time. He has office hours before most recitations and I would really take advantage of this time to ask any questions you have on the practice quiz since they're very similar to the quizzes you'll take in class. If you're ever lost on a problem on the problem set, the practice problem set is great! It has the answers at the end and a lot of the questions are similar, so you can make sure you're on the right track with the ones that are confusing. Again, just ask him. He'll break down any question you ask. This kind of goes without saying, but make sure you pay attention when he goes over the problem set during recitation. A lot of questions I've had have been covered by simply paying attention. Another great thing to look at is the concept guides! He has them sectioned by chapters, and it's a really great tool to look over if you're stuck or just want to make sure you're understanding the material and not getting

behind. Exams- always take the practice exam that's in your companion packet!! If you're able to, fitting this into your studying time can really make the difference. You'll realize what you confidently know, and where you need to focus more of your studying. Class presentation- choose a topic that's interesting to you!! This will make all the difference when presenting/ writing the paper. Try not to wait until the last minute to make a decision. Extra Credit- Jump. On. It. The sooner you start, the quicker it'll add up and could very well be the difference between a letter grade. Check out the online extra credit problems. You'll be earning points and studying at the same time. Overall, study, ask questions, and have a great year with Dr. Russel! I'm willing to bet you'll form a lasting bond with this amazing teacher! Now, go crush it! Good luck!

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Hello chemistry fall students. This general chemistry sequence can be challenging at times, but in the end it was totally worth it. I've learned so much, and did so many things I never knew I could do. Dr. Russell makes this class so much better. He will always be there to answer all your questions, and he never makes you feel like you're asking too many. You have definitely picked the right professor. When things get challenging get help from the tutoring center. Don't forget to have some fun learning about chemistry and good luck!

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Words of Wisdom: Don't get sucked into the internet! It can be a great secondary tool, but there is too much info to filter through and you will waste a lot of time and effort without reward. My main points of advice would be: 1.) Start with listening an/or going to lectures 1st. Bring and write on power points 2.) Practice Problem Sets, Start Early!! Take one or two problems at a time and really get them down. If you save it to the day before you will be overwhelmed and not prepared for the quiz. They can be difficult and you will want lots of time to absorb info. This is a good time to break up the chapters just read the section for the problem you are doing and then move on. If you try and read the chapter all at once you will not gain very much. 3.) Get labs done as soon as possible even the same day. It is much easier to do the labs while they are fresh in your mind. If you wait a week you will look back and wonder how you got your info and will waste lots of time redoing things. 4.) Look over and have concept guides to reference and practice with. Great for review as well. 5) Practice Exams and Quizzes are essential study tools but save them for last.....Get your work done first that you need to turn in then you can focus on just practice and study. \*Ask for help early if you are feeling stuck or overwhelmed. Email is a great tool!!! \*Find a study buddy, preferably your lab partner, it helps if you get stuck.

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Some tips I can give you to help you through this series is make sure you stay caught up. Falling behind in a class like this is very hard to come back from the class is very fast paced and you will fall behind on material. This can be very hard to overcome if you have a job or something you do other than school. Another tip is do the practice tests and quizzes if you have enough time. They are very helpful and make the actual tests and quizzes seem easier because you have already gone through the material and gotten the answers back. A huge tip I can give you however is go to the lectures because that is one thing that would've helped me very much even though they are videoed and you can watch them later you can't ask a question when you want to watching the video like you can if you go to the lecture. And most importantly get help when you need it whether it's the tutoring center or Russell's office hours.

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One thing that I would suggest is to take advantage of study groups and the tutoring center. The tutors in the tutoring center are very helpful and I would not have made it through without them. I do wish that I began working together with other students earlier on because I had little chemistry knowledge prior to this sequence and struggled a bit. Something that I think is very crucial is to form good study habits and not to procrastinate. Also, a ton of extra credit opportunities are offered which I think is important to take advantage of. Dr. Russell is an amazing teacher and is always willing to help. You will not regret taking him!

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The entire process of going through chemistry 221-223 was such a big learning experience. I learned a ton of great study habits and skills along the way and I am going to list them out for you to make your learning curve as easy and smooth as possible! The very first thing I would like to say is to PLEASE spread out your work! And that goes for really every class. Throughout most, if not all, of chemistry 221 I would find myself doing all of the work (problem sets, labs, practice material, extra credit) all at once and it was a very stressful and even destructive way of doing school. During CH 221 and 223, I changed up my habits and learned how to spread out my work so that I was more stress free and had more time to take care of myself mentally and physically since I was also doing this with my other classes that were just as difficult as this one. I found that even though my classes were difficult, if I did my homework and studies a bit at a time (A bit on Monday, bit on Tuesday, finish Wednesday, etc.) I was MUCH more efficient and learned more and had a lot more time for myself, and I aced 200 level bio and math WITH this sequence! If that isn't proof of how important this is I don't know what is! I also want to emphasize on the fact that there is SO MUCH EXTRA CREDIT available in this class! I was foolish the first term and a half since I didn't pay attention to all of the extra credit opportunities, but once you catch on it can be an absolute life saver! Also if you are struggling with anything to please go to the tutors in the library. They are all such a huge help and super nice people.

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The chemistry sequence is a challenging class (but you're in good hands if you take it with Mike). I was very successful in this sequence so there's a few things that worked for me. One of the most important things is do all the practice quizzes in the companion. Second, remember your calculator can store notes (cough cough). But what was vital for me is when I was studying for the midterms/finals (doing the in class review, practice exams and exam prep worksheets) I had a piece of paper handy where I would write myself notes, formulas and important things to remember. Additionally, mark the crap out of your problem sets and go back and look at them before the midterm. Also, be in the tutoring center as much as you can. Lastly, don't lose faith in yourself (especially after the 1st midterm in 223) I took math and the 200 bio sequence with this class, It's possible! Good luck, it'll fly by fast and don't forget the extra credit! Oh and never forget to take your prof hat off once in a while.

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Dear incoming chemistry students, welcome to an amazing class! Dr. Russell is a fantastic instructor, and he is here to help you be successful in any way that he can. Really! Probably the most important advice that I would give to a new student is never get behind on work for this class, and do not underestimate the amount of time required to master the concepts. Start your problem sets early, and always, always, always take the practice quizzes! Dr. Russell also offers many opportunities for extra credit. If you schedule the discuss posts and the chemical of the week into your assigned class work, you will end up with a decent number of points at the end of the term which will help buffer your grade. If you find yourself struggling with a concept, keep going. Go to office hours or the tutor center if you need help. You are not expected to figure out chemistry all on your own! Chemistry is challenging, but it is doable. You can learn Chemistry! Good luck!

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Name: \_\_\_\_\_

## CH 221 CLASS PRESENTATIONS ROUGH DRAFT PAPER

*Staple this form to the **top** of your Rough Draft Class Presentation Paper for full credit*

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**Lab Section:**

**Reserved Element:**

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*Directions:*

- This assignment is worth 20 points out of the 100 points assigned to the Class Presentation assignment.
- *Include* at least two typed pages of your Class Presentation report with this form (more is fine!)
- *Include* at least one abstract from a peer reviewed scientific article with a proper citation included (more is fine!)
- This page should be stapled to the **top** of the other pages in this assignment to avoid a five-point penalty

*Helpful Resources:*

- The CH 221 Class Presentation Frequently Asked Questions handout: <http://mhchem.org/faq1>
- The CH 221 Citation Guide: <http://mhchem.org/cg>

*Class Presentation Rough Draft Paper Due Dates:*

- *Section 01 (Tuesday):* **November 5 at 8:00 AM**
- *Section 02 (Tuesday):* **November 5 at 1:10 PM**
- *Section H1 (Wednesday):* **November 6 at 1:10 PM**
- *Section 03 (Thursday):* **November 7 at 8:00 AM**

*The final Class Presentation paper will be due during Week 9 in Chemistry 221.*