

CHMY 591: Special Topics in Chemistry—*Exploring Chemistry*

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Goals

The intended audience for this course is teachers currently or potentially involved in teaching chemistry either as a stand-alone class in high school, or as a section in an integrated science class. The material covered in a chemistry class (or unit focused on chemistry) can be intimidating to some teachers. It is my hope that CHMY 591 will lead to a greater understanding of chemical concepts to enhance your teaching abilities and give you confidence in this area. Students of this course will gain an insight in how the topics in chemistry are linked together and how they can all be applied to explain other areas of science. Participants will also learn common pitfalls in the understanding of these materials and how to work around them as they teach their students. If you are an accomplished chemistry teacher, you are most likely beyond the scope of this course.

Approach and Assessment

The primary material for this course is the required text (Chemistry in Context, 7th or 8th Edition). I will provide a summary of the reading which will include my own insights and comments on pedagogy and subject matter. The summaries and discussions will focus more on the conceptual issues with the material, however there is some math involved that I would like you to master by the end of the course. I will provide a set of problems for each unit related to the reading. The science content of the course itself is not at a graduate level, but it is combined with discussions of methods for teaching the material and hopefully provides a meaningful cache of ideas and contacts. Assignments and exams are graded on correctness, while discussions are graded on meaningful participation.

While we do have discussions related to the teaching of this material, please keep in mind that this is a content course and that the primary focus of the class is the chemistry involved and not the teaching methods.

Course Outline

In terms of content, we will be following a similar sequence as what is presented in the textbook (Chemistry in Context, 7th or 8th Edition) for this course. This material is typical of what might be taught at several different levels of a 6-12 grade environment. The junior high and middle school teachers may find that the course covers more chemistry than typical science course whereas the high school teachers may find that it covers most of what they cover. Please refer to the course calendar on D2L for specific scheduling and due dates.

Online Activities

Students are expected to participate regularly in discussions, submit assignments and access homework problems online. The time commitment will typically be 6-10 hours/week, but may require more if a student is not comfortable working in an online environment, or if the material presented is more difficult. The time to put in extra hours is early in the course. I will do my best to provide video tutorials for working in the online learning environment (D2L), and I am always willing to provide additional help if it is needed.

Computer Requirements

You will need access to a computer able to connect to the internet and run a web browser (PC or Mac will work fine with D2L). You will also need access to MS Word, PowerPoint (or Pages and Keynote) and Adobe Acrobat Reader (or a program that can translate pdf files). You can download this at the link below (uncheck the Optional Offer radio box if you do not need McAfee Security Scan Plus):

<https://get.adobe.com/reader/>

Homework Assignments

We will have 1 introductory homework assignment (worth 20 points), and 3 unit homework assignments (each worth 40 points) that will typically be due at 11:00 pm MST on Thursdays. The introductory assignment asks general questions regarding your experience and is due sooner (Wednesday). Homework assignments are retrieved and submitted in the “Dropbox” area of D2L. I post the assignments as both Word and PDF documents so that everyone can read them. Your submitted assignments do not need to include the original document, but please arrange and number your responses so that I know what I am reading.

Please save your homework assignments with the following filename format: *LastnameUnitnumber* (for example, *GoodmanUnit1.doc*). Saving as a Word document (.doc or .docx file) is fine, as is Pages. If you have a different word processor, try saving your document in the default format and uploading this. I will try to access it, and if it is a problem I will communicate with you.

To submit your assignment:

- Log on to D2L
- Select “Dropbox”
- Open the appropriate assignment
- Click “Add a File”
- Browse to find the file on your computer, and select the file. Then click “Open” or “Choose” (this will take you back to the “Add a File” page)
- Once you have added all the files you need, click “Upload” (this will take you back to the “Dropbox” page, where you should now see a list of the files you have uploaded)
- Click SUBMIT to submit your assignment

If you are concerned about me receiving your assignment, please feel free to email me and I can check.

The first homework assignment (Intro Homework) asks for general information about yourself that I would like to know. Some of this you will also post to the Intro Discussion topic so that everyone in the course finds out a bit about each other.

Late Assignments

We all have days during the summer when we have far too much to do, and we miss deadlines. I recognize that summer is an important time to spend with children and family. If you expect that you will not be able to submit your assignment by the due date and time, please let me know via email. I allow late submissions in most circumstances, but I do need to know ahead of time so that I can arrange a time extension for you. As you would do for with your students, I will try to be flexible while maintaining fairness. You are allowed to have one 'unexcused' late assignment (if you do not have a good reason for the assignment to be late), but I would encourage you to email me in cases of personal conflicts to excuse the late assignment. If you have more than one late assignment where you have not contacted me, I will deduct points for this late assignment (15% if turned in within 1 week, then an additional 20% if turned in later).

Discussion Guidelines and Grading

Most weeks will have a discussion topic for the class. I will post the topic for discussion to get the ball rolling. You will need to post three quality contributions to each discussion during the week. Your original contribution comment will be worth 7 points, and you are expected to do this for each discussion topic. A quality contribution is something that is meaningful and provides value both to the discussion and to other students. A statement such as "I like what Joe said" does not count as meaningful. You are welcome to expand on another student's post, but you must provide a significant new point in your expansion. A significant contribution may also be a meaningful question related to the topic, but allows the discussion to branch off slightly from the original topic. Questions should refer to correct science and how the topic of discussion may apply. For example, if the topic is battery technology and electrochemistry, a question should not deviate to readily available textbook information such as, "How did Volta's original battery work?" A meaningful question should also be an open-ended question that fosters discussion rather than a close-ended question that has a brief answer (such as 'yes' or 'no'). Each subsequent contribution or meaningful comment is worth 4 points and there is a maximum of 15 points for each discussion topic (15 points per week). The first discussion is a class introduction where you will all be introducing yourself and providing some background information. This discussion is only worth 5 points, and you will not be required to respond to other individual's posts.

The discussions work best if there are regular contributions during the week and not a big flurry of activity 1 hour before the discussion ends. This is not intended to be busy work, but instead a way of sharing knowledge with others about a particular topic. Do not feel self-conscious about posting a question if you feel your knowledge is lacking during a specific week. I can guarantee that there are many topics that we will be discussing that, in my education, I have forgotten, not considered, or not been interested enough at the time to explore. ***We all have our strengths and weaknesses.***

There will also be a general discussion area available where you can post questions about the course or pose questions to others. These will not count in your total points, but they nonetheless provide a valuable component to your learning in the course. You can also share teaching experiences you may have in a particular topic. I recognize that many of you are very accomplished teachers and have more to share than myself. **The less experienced teachers can benefit greatly from your wisdom!**

Discussion Threads

I will start each discussion with a topic which will create a thread in the postings. If you are going to post a related question for one of your postings, please begin a new thread so that it becomes more visible.

When you are *responding* to a post, please keep them succinct—2-5 sentences is generally enough. Please avoid multi-page essays as few people take the time to read those. See if you can find a logical breaking point, and post as 2 or even 3 responses. This should be a discussion, not a lecture. Think of yourself physically in a group of people, and think of how you would respond to a question in those circumstances. If you are addressing a comment, please refer to the original comment since time sequencing is not always evident in online discussions. I do not need to say this, but I am required to—always use appropriate language. All communication is to be respectful and free of personal agendas. If there is something you feel you need to say and you are not sure if it is appropriate, talk with me first, please.

You can find the discussion topics by clicking on the “Discussions” icon on the homepage for the course. If there are postings that you have not read, the icon changes slightly. When you open the Discussions page, the number of new postings will be shown under ‘unread’. It is a good idea to open and read all postings. These can build up quickly, so I recommend that you have a regular regimen of logging in and checking the posts. When you are writing a response, you do not need to respond only to the latest thread. If you would like to respond to an earlier thread, simply double click on the posting you would like to respond.

Grading Policies

Your final grade will be determined by the total number of points you accumulate during the course. There are 960 points possible with a breakdown as follows:

Exams	3 x 100 points	300
Quizzes	3 x 55 points	165
Homework	1 x 20 points + 3 x 40 points	140
Project	1 x 100 points	100
Discussions	1 x 5 points + 6 x 15 points	95
Final Exam	1 x 200 points	200
Total		1000 points possible

Exams, quizzes and homework will all be taken or submitted through D2L. Quizzes will be on material covered in the chapter(s) from that week, and Exams will only include material from that unit. **The Final Exam is comprehensive**, covering all material from the course.

Details on the Project will be forthcoming later in the course. For this you will be receiving equipment in the mail. **We will pay for return shipping if you ship the material back between July 29th and August 1st.**

Points will be reported as often as possible and viewable in the “Grades” section of D2L. I will stay on top of the grading as best I can. You will be notified through D2L when grades have been updated. If there is an assignment or points within an assignment that you feel I have missed, notify me immediately so we can figure out where the problem occurred.

Final Grades

<u>Percentage</u>	<u>Grade</u>
≥90%	A
87-89.9%	B+
83-86.9%	B
80-82.9%	B-
77-79.9%	C+
73-76.9%	C
70-72.9%	C-
67-69.9%	D+
63-66.9%	D
60-62.9%	D-
<60%	F

You will be able to view your grades in D2L until the University closes access to the course.

TIPS FOR WORKING ON THE COURSE IN D2L

- Always use the breadcrumbs near the top of the window or within a window rather than the back and forward buttons of your browser to navigate. D2L works more smoothly this way.
- There are ways of replacing submitted assignments within the open dates for the Dropbox. If you have problems with this, please let me know and I can help.
- If you are having difficulties with D2L or library access that do not relate directly to the content of this course, e.g., you cannot get your library proxy access to work, please contact the Burns Center or Library staff.
- ALWAYS let me know if you have work or personal situations that require you to delay in getting your work in. I will make allowances, within reason.
- Keep up with the discussions. These are really easy points to earn, and if you check in on them several times a week, you will find that they help you keep up with things in the course. See Discussion Guidelines section.

I have tried to include everything I could here to get you going this first week.

I am looking forward to meeting and working with you during the next 7 weeks in our virtual classroom!