

# CHEM& 161 F

## General Chemistry I • 6 CR

Fall Quarter 2021

**Instructor:** Dr. Daniel Mitchell

**Office:** S340K

**Office Hours:** After lecture each day

**Meeting times**

**Lecture:** Section F: MW 5:30PM-7:40PM on Zoom (synchronous)

**Lab:** Section F: T Asynchronous (recorded lecture and content)

**Cell Phone:** 206-660-2484

**Office Phone:** 425-564-2474

**Email:** [dmitchel@bellevuecollege.edu](mailto:dmitchel@bellevuecollege.edu)

**Prerequisites:**

**1. MATH 141 with a C or better, or concurrent enrollment.**

**2. CHEM 140 with a C or better, or by chemistry placement.**

**Textbooks and Equipment:**

**Optional:** Tro. "Chemistry, Structure and Properties" 2<sup>nd</sup> edition, Pearson Prentice Hall, 2017

**Required:** Scientific or graphic calculator

**Required:** A device with access to zoom, including a microphone and webcam

**Required:** A device to copy/scan/photograph hard copies in order to create PDF files for Canvas submissions (cell is ok)

**Required:** Modified Mastering Chemistry access (*see below*)

**Required:** Laboratory manual (check the schedule carefully each week to know what we are doing):

-- Online lab book: <http://scidiv.bellevuecollege.edu/Chemistry/>

**Optional:** Shaginaw, Tro. "Solutions Manual: Chemistry, Structure and Properties," Pearson Prentice Hall, 2017

**Optional but highly recommended:** A laminated periodic table-available at the BC bookstore and most other bookstores.

**Optional but highly recommended:** A notebook that is divided into clearly marked sections for lecture note-taking, text note-taking, workspace for problem solving, and questions to be asked in class, in group study, or during office hours.

**Holidays:** October 19<sup>th</sup> (T), November 11<sup>th</sup> (Th), November 25<sup>th</sup> and 26<sup>th</sup> (Th/F)

**Quarter:** Fall Quarter runs from September 27<sup>th</sup> through December 16<sup>th</sup>

**Mandatory in-person exam dates:** 10/20, 11/2, 11/17, 12/8, and 12/15

**Course Objectives:** This is the first part of a three-course chemistry sequence primarily intended for science and engineering students. This course will assume that you have had some prior exposure to chemistry at the "121 level." Chem 161 covers atomic structure, periodicity, stoichiometry, chemical reactions, bonding, polarity, and structure.

**Assigned Points (subject to change):**

Exam 1 ("Parts" 1, 2, 3)	100 points
Exam 2 ("Parts" 3, 4, 5, 6)	100 points
Exam 3 ("Parts" 5, 6, 7, 8)	100 points
Nomenclature Quiz	40 points
Laboratory Portion	100 points
Quizzes (best 8 @ 10 points)	80 points
Online Homework	90 points
Final Exam (cumulative + Ch 8)	200 points
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Total	810 points

The grading scale will be a modified curve, if appropriate. You cannot do worse than the values given in the table above for a particular percentage of total points. I **will not** apply a grading adjustment if the class average is higher than 75%.

**Grade Point Based  
on a Percentage of  
Total Assigned Points**

A	95-100
A-	90-94
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D	60-69
F	≤ 59%

# Tentative

## Course Outline and Test Schedule

Week	Day	Chapter Reading Assignments in Text
1	Sept 27- Oct 1	Ch. 1 – <u>Atoms</u> Ch. 2 – <u>Measurement, Problem Solving, and the Mole Concept</u>
2	Oct 4-9	Ch. 3,4 – <u>Quantum Mechanical Model, Periodicity</u>
3	Oct 11-15	Ch. 3,4 – <u>Continued</u>
4	Oct 18-22	Ch. 5 – <u>Molecules and Compounds (Ionic)</u> <b>No Class Tuesday, Oct 19</b> <b>Exam #1: Wednesday, Oct 20</b>
5	Oct 25-29	Ch. 5 – <u>Molecules and Compounds (Covalent)</u>
6	Nov 1-5	Ch. 6 – <u>Chemical Bonding I</u>
7	Nov 8-12	Ch. 6 – <u>Chemical Bonding II</u> <b>No Class Thursday, Nov 11</b>
8	Nov 15-19	Ch. 7 – <u>Chemical Reactions and Chemical Quantities</u> <b>Exam #2: Wednesday, Nov 17</b>
9	Nov 22-26	Ch. 7 – <u>Continued</u> <b>No Class Thursday (25<sup>th</sup>) or Friday (26<sup>th</sup>)</b>
10	Nov 29 - Dec 3	Ch. 8 – <u>Intro to Solutions and Aqueous Reactions</u>
11	Dec 6 - Dec 10	Ch. 8 – <u>Continued</u> <b>Exam #3: Wednesday, Dec 8</b> <b>Sunday, Dec 12-Last Day to Withdraw (W)</b>
12	Dec 15	<b>Final Exam Week</b> <b>Final Exam Wednesday, December 15<sup>th</sup>, 5:30PM-7:20PM</b>

## Laboratory Sessions for CHEM 161

### Lab Reports:

- ❖ The laboratory portion of Chemistry 161 is worth 100 points. There are 7 labs worth 12 points, plus the chemical formula lab that will require a “full” lab report (16 pts). I will provide details of this lab report in a later handout.
- ❖ **There are no make-up labs, there are no optional labs.** Labs are **not** listed in order on the BC website.
- ❖ The online lab manual can be found at <http://scidiv.bellevuecollege.edu/Chemistry/>
- ❖ **Prelabs are due at 11:55PM on the date indicated in the table below**, and are worth a portion of the lab report points. You must show your work on your prelab. Prelabs are where most students miss points on the lab.
- ❖ The lab itself: Each lab will have an assignment page on Canvas with instructions for how to complete the prelab and the postlab. The prelab is typically a simple worksheet, and will usually be found in the “online lab manual.” The postlab will usually involve watching a video, or taking mock data, or using a web app to gather data and record results. This data will then be used to solve a set of worksheets that you will hand in (upload to Canvas).
- ❖ **Each post-lab write-up will typically be due Friday.** Specifics will be given well ahead of time via announcements.

### Tentative Lab Schedule:

Week	Prelab Due	Experiment
1	Sept 29	Scientific Measurements
2	Oct 6	Density
3	Oct 13	Spectroscopy
4	Oct 20	NO LAB – Gap week to pace labs back
5	Oct 27	Electrolytes
6	<b>Nov 2</b>	<b>Nomenclature Quiz: 11/2 @ 5:30PM</b>
7	Nov 10	Molecular Models
8	Nov 17	Synthesis of Aspirin ( <b>Full Report</b> )
9	Nov 24	Titration of Aspirin
10	Dec 1	Beer's Law
11	Dec 8	NO LAB

**Synchronous Content:** Lectures will start at the scheduled class start time. I will try to record each lecture, but they're not guaranteed (hence: synchronous). Recording mistakes do happen, and I won't re-record a lecture that fails or has an error during the regular synchronous hours of the class. Show up to each lecture! Office hours will happen after each lecture "ends."

**Asynchronous Content:** Discussions and Lab times are scheduled, so you may be expected to show up for any of these pre-established time windows. We will **default** to the lab hours being asynchronous. Any asynchronous content from these portions of the class will be pre-recorded and uploaded to Canvas under "Panopto Recordings." You're expected to watch these videos, and are responsible for the content contained in any such "asynchronous" content. Any time we do "meet" on Zoom during "lab times," I will make it clear ahead of time with an unambiguous announcement.

### **Chem 161 Course website—CANVAS:**

I use an online course management system called CANVAS to post PowerPoint slides, online quizzes, handouts, answer keys, grades, discussion forums, etc... It is **required** that you log into CANVAS. All quizzes will be given on Canvas.

- 1) Go to <http://bc.instructure.com>
- 2) Log in with your Bellevue College account information (be sure to check your BC email FREQUENTLY).
- 3) **Set your notifications to receive announcements "ASAP". Send me a message once you have done this.** .
- 4) Browse around. Maybe setup an avatar, or put something about yourself in your profile.

### **Evaluation and Grading:**

Tests and Final Exam: There will be three, 50-minute Canvas tests scheduled on the dates given in the course outline. All new material covered after the last test and prior to one day before the test day is subject to examination. Appropriate older material may appear as well. The final examination is cumulative. The final exam will not be returned.

### **Process for Examinations:**

While we are remote for lectures, discussions, and labs, **we will meet in person** for our major examinations and final exam. Basically, show up at the right time and place... I'll hand the exam out, you fill it out, and that's it. No fancy cameras or digitized auto grading nonsense.

Here are the in-person exam dates (We've reserved adjacent rooms **T118 and T127** for our exams):

Exam 1: **10/20**

Nomenclature exam: **11/2**

Exam 2: **11/17**

Exam 3: **12/8**

Final Exam **12/15**

There will be **no remote exams**, even for makeups. If something qualifies as a makeup, we will need to reserve a room for you to come in. "In person" exams was a part of the course description for our class. If you can't make in person exams you will need to drop the course and take another section.

**Online Quizzes:** Every week you will receive 10 point online quiz that is launched on **CANVAS** every Friday. This quiz must be completed by 11:55PM on the following **Tuesday**. The material covered on a particular quiz will be restricted to the current chapter being studied and the chapter preceding it. These quizzes are **not** on Lockdown or monitor.

#### Mastering Chemistry (Online Homework) Assignments:

I have assignments that will be due every **Wednesday** at 11:55 PM. They are required and are worth 10 points each, for approximately 90 points of your final grade. You will need to have an access code.

1. You already have access to Mastering through a BC program called inclusive access (IA) that you already have paid for with your tuition. IA includes the ebook plus mastering. You have two options:
  - a. Cancel IA and get a refund on that, and then buy Mastering direct.
  - b. Keep IA, and just click on the “IA Materials” link on the left menu in canvas and launch courseware.

The course ID for our class is **mitchell10662** (this is not an access code, just our course ID). You shouldn't actually need to use this code in either situation noted above, but it might help to know it.

#### **Course Policies:**

**Tests, Quizzes, and Exams:** Please be sure that you have no conflicts with the scheduled test/quiz dates as **NO** make-up tests/quizzes will be given, except in cases of **documented** illness or family emergency. If you know on the **first day of class** that you will not be here for a given test/quiz date, it is your responsibility to **immediately** inform me. If you inform me of a conflict less than two weeks in advance of a given test/quiz date I **will not** accommodate you. Students **must** notify me of an illness/emergency that will cause you to miss a test/quiz by leaving a message on my phone (206-660-2484) or by email ([dmitchel@bellevuecollege.edu](mailto:dmitchel@bellevuecollege.edu)) **prior** to the start of a test/quiz. If you would like a test/quiz re-graded, you must submit it within one week of it being returned to you, with a note indicating specifically what you would like re-graded. The final exam is not optional! If you do not take the final, you will fail! **Exams will not be re-opened**. Be sure to take your exam in a location with reliable internet service, on a reliable device (Ethernet connection).

**Attendance:** I expect that you will make every attempt to be at all lecture meetings on zoom. It is the very rare instance that a student can do well in a course by attending few or no lectures. Don't attempt this! I really cannot help you if you try this and are unsuccessful in this class. If you miss a class, it is **your responsibility** to obtain lecture notes, handouts, assignments, announcements, etc. from other classmates, the library, the web, or Canvas. Please do not email me to ask what you missed.

**Conduct:** Dress professionally on Zoom, and act according to professional standards. Try to be conscious of when you're broadcasting video and audio. It does seem standard to share videos of pets during breaks from what I've gathered.

**Assigned Reading:** Each week chapters have been assigned for reading (see schedule above). The expectation is that you have completed this reading before the beginning of the week in which it is covered in lecture. You are responsible for all material in the reading, including anything not covered in the lecture unless instructed that the material will be omitted. Be aware that the schedule is flexible; attendance in class will keep you up-to-date on the schedule.

**Homework from the Text:** If you wish to fully develop your problem solving skills to be evaluated on tests and quizzes, you should spend a minimum of **2 hours study outside of class for each hour of lecture**. You should **not** expect all problems on tests to be similar to those that you do for homework or to those covered in lecture. Your preparation for a test should include working problems that go beyond a given assignment.

# Welcome

I am very glad you have chosen to study the amazing discipline of chemistry. It is a challenging and exciting subject. If you bring any doubts with you (“I failed high-school chemistry.”) or preconceptions (“Chemistry is for nerds.”), please park these feelings at the door. Chemistry is a central science that manifests itself in many areas of our lives. *What does it take to be successful in chemistry?* **First, be prepared.** Do the reading and assigned problems and think carefully about the work. Don't fall behind, since lecture will not be a rehash of text material. Strive to learn good note taking. **Second, ask questions.** You'll find that I won't have all the answers but I will try to steer you in the right direction to find that answer. You are also in the company of other learners (fellow students and other faculty)-ask them questions as well. I encourage the formation of study groups. These are successful only if everyone in the group has worked individually on the reading and homework prior to gathering the group members. **Third, practice.** I can't emphasize this enough. This may take the form of repeated readings, extra problem solving, organized memorization, and practice in verbalization and writing answers to questions.

**Problem solving.** Solving chemistry problems is demanding and requires that you use chemical language and concepts, and apply mathematical and reading skills. Frustration will likely affect you, at some point, as you work problems. Do not get discouraged! If you cannot solve a problem after two or three attempts, write down questions about aspects of the problem you do not understand. Then use your text, class time, group study, and office hours to get your questions answered.

**Overcoming barriers to learning.** Attitude and willingness to change unhelpful habits play major roles in your educational success. If you are firm in looking for “just the C” then you should look for the door out because you would be wasting your time and money and potentially that of your classmates. Rote memorization of text and problems is a bad habit that students resort to when overwhelmed or disorganized. Learn about lifelong, better study habits and skills by talking to the chemistry tutors in the Science Study Center (S100) and asking them how they became successful (425-564-3122). This Center also provides chemistry tutoring. Bottom line: All of you should talk to someone that you respect and know is a successful learner. **NOW!**

\*\*\* The course outcomes for Chemistry 161 may be found at <https://www.bellevuecollege.edu/classes/All/CHEM%26/161>

**Science Division Policy on Cheating:** You, the student, are expected to conduct yourself with integrity. If you cheat, or aid someone else in cheating, you violate a trust. Cheating includes, but is not limited to, copying answers on tests or assignments, glancing at nearby test papers, swapping papers, stealing, plagiarizing, and illicitly giving or receiving help on exams. If you cheat, the following actions will be taken:

- 1) You will receive a grade of zero on the work where the cheating occurred. This grade cannot be dropped.
- 2) A report of the incident will be sent to the Dean of Students. He/she may file a report in your permanent record of take further disciplinary action such as suspension or expulsion from the college.
- 3) If you feel you have been unfairly accused of cheating, you may appeal. For a description of the due process see WAC 132H-120.

**BC Academic Success Center:** <http://bellevuecollege.edu/asc> The ASC offers free tutoring, and paid positions for student tutors.

## Counseling Services

These are tough times for many of us, financially, personally, emotionally. The BC Counseling Center is using a free and secure web-based program called Doxy.Me. This allows you to meet with a BC mental health counselor via video conferencing. Appointments are available Monday-Friday 8:00am – 5:00pm. Go to: <https://bellevuecollege.edu/counseling> or call them at 425-564-5747.

## Other Offices and Resources:

Financial Aid | United Way Benefits Hub | The Women's Center and Center for Career Connections  
Academic Advising | Flu Team: COVID-19 resource page

**Some Covid stuff** (*that is highly tentative:*) All students, including those learning remotely, must be fully vaccinated by Nov. 5 unless they've been granted a medical or religious exemption. Questions? Students can submit an [online help request ticket](#).

Mask up indoors. Don't forget that regardless of vaccination status, all faculty, staff, visitors and students must wear a mask when indoors, unless you're working alone, eating or drinking.

Students and employees who've been exposed to someone with COVID-19, have COVID-19 symptoms, or tested positive, please:  
--Complete the [COVID-19 Report Form](#). This helps the College conduct contact tracing and provide support for both students and employees.

--Do not come to campus. Students should notify their instructor, while employees should notify their supervisor and wait for HR to contact them.

**Note that the college is constantly changing the grammar and phrasing of these following policies. The provided links should link to any updated language if it has changed since the quarter began.**

The Disability Resource Center serves students with disabilities. Common disabilities include physical, neurological (e.g. Autism, ADD/ADHD), and mental health (e.g. depression, anxiety). If you are a student who has a disability or if you think you may need accommodations in order to have equal access in your classes, programs, activities, and any other services, please contact the DRC.

If you require assistance in an emergency, please meet with your individual instructors to develop a safety plan for while in class and contact the DRC to develop a safety plan for while you are elsewhere on campus.

The DRC office is located in building U Room 001. You can contact the DRC by stopping by the office at B132, calling our front desk phone number (425) 564-2498, emailing [drc@bellevuecollege.edu](mailto:drc@bellevuecollege.edu). Deaf students can reach us by calling TTY: (425) 564-6189, or by Skype (account name **DRCatBC**). For more information about the services we offer, including our Initial Access Application, visit our website at [Disability Resource Center \(http://www.bellevuecollege.edu/drc\)](http://www.bellevuecollege.edu/drc).

Service Animals are allowed in this classroom. Emotional Support Animals need to be approved through the DRC. All other animals will be asked to leave. If you believe you need your animal with you, please connect with the DRC and refrain from bringing your animal until a decision has been made.

### **Affirmation of Inclusion**

Bellevue College affirms the diversity of human identities and experiences and is committed to creating spaces free from harassment and discrimination (4000 Institutional Commitment to Inclusion). Furthermore, Bellevue College rejects all forms of racism, homophobia, sexism, xenophobia, religious intolerance, classism, ableism, ageism, language bias, and hate speech or actions that attempt to silence, threaten, or degrade others.

In classroom settings, we might disagree with views shared in the classroom; however, courteous, and respectful behavior and responses are always expected. When providing criticism, it is important to focus on the ideas and not the person.

Faculty are encouraged to disrupt and address hate speech and behaviors. Students are also encouraged to speak up and advocate when they experience, or witness hate speech and behaviors. Faculty, staff, and students also are encouraged to submit a report to the CARE Team regarding any concerns of discrimination, harassment, or inappropriate and disrespectful conduct.

[Affirmation of Inclusion](https://www.bellevuecollege.edu/inclusion/) (<https://www.bellevuecollege.edu/inclusion/>)

### **Reasons of Faith and Conscience**

Reasonable Accommodations for Reasons of Faith and Conscience: Students who will be absent from course activities due to reasons of faith or conscience may seek reasonable accommodation so that grades are not impacted. Such requests must be made within the first two weeks of the course to the office of the Associate Vice President of Student Affairs (see Bellevue College Policy 2950 (<https://www.bellevuecollege.edu/policies/id2950/>)). In the event you feel you are being discriminated against based on faith or conscience, you may refer to the procedures outlined in the college's [Discrimination, Harassment and Retaliation Policy 1440P](https://www.bellevuecollege.edu/policies/id-1440p/) (<https://www.bellevuecollege.edu/policies/id-1440p/>).

### **Annual Notice Non-Discrimination**

Bellevue College does not discriminate on the basis of race or ethnicity; creed; color; national origin; sex; marital status; sexual orientation; age; religion; genetic information; the presence of any sensory, mental, or physical disability; or veteran status in educational programs and activities which it operates. Bellevue College is prohibited from discriminating in such a manner by college policy and by state and federal law. All college personnel and persons, vendors, and organizations with whom the college does business are required to comply with applicable federal and state statutes and regulations designed to promote affirmative action and equal opportunity.

Reports of gender and sex-based based discrimination, sexual misconduct, or retaliation by a student should be raised with the Title IX office (see 1440P2 for contact information). In cases where the impacted party is a student and the responding party is a college employee, the Title IX coordinator will direct the matter to the Office of Human Resources (HR). All other reports, including all reports where the impacted party is an employee, should be raised with the HR. If a report is against personnel in the Title IX office or HR, it should be submitted to the president's office for referral to an alternate designee.

[Equal Opportunity](http://www.bellevuecollege.edu/equal/) (<http://www.bellevuecollege.edu/equal/>)

### **Confidentiality and Mandatory Reporting**

As an instructor, one of my responsibilities is to help create a safe learning environment on our campus. It is my goal that you feel able to share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. I will seek to keep information you share private to the greatest extent possible. However, I am required to share with the Title IX Coordinator any and all information regarding sexual assault and other forms of sexual misconduct (e.g. relationship violence, stalking) that may have occurred on campus or that impacts someone on campus. Students may speak to someone confidentially by contacting the BC Counseling Center at (425) 564-2212. The Title IX Office can be contacted at 425-564-2641 and more information can be found at [Title IX \(http://www.bellevuecollege.edu/titleix/\)](http://www.bellevuecollege.edu/titleix/).

If you have any concerns, you may report to: [Report Concerns \(https://www.bellevuecollege.edu/reportconcerns/\)](https://www.bellevuecollege.edu/reportconcerns/).

### **Student Conduct Code and Academic Integrity**

Any act of academic dishonesty, including cheating, plagiarism (using the ideas or words of another as one's own without crediting the source), and fabrication, and inappropriate/disruptive classroom behavior are violations of the Student Conduct Code of Bellevue College. Examples of disruptive behavior include, but are not limited to, repeatedly talking out of turn, arriving late or leaving early without a valid reason, allowing cell phones to ring, and inappropriate behavior toward the instructor or classmates. The instructor can refer any violation of the Student Conduct Code to the Manager of Student Conduct for investigation. Specific student rights, responsibilities, and appeal procedures are listed in the Student Conduct Code at: [Student Code](#)