General Chemistry III Syllabus

(Fall Quarter 2021 Item #3339)

Instructor: Dr. William Stier

E-mail: william.stier@bellevuecollege.edu

Phone: DO NOT CALL, **SEND A MESSAGE VIA CANVAS I might not see a direct email**

Office location: S340, station #1 (I will not be in on campus this quarter).

Office Hours: Monday and Wednesday and Friday, 1000 to 1730.

Monday, Wednesday and Friday after class.

Other times by appointment.

Changes: Any changes to this syllabus will be announced electronically.

Course Information

Section A (#3345) Meets:

Note: After on campus labs are determined, this information will be updated.

Monday, from 1030 to 1220 online
Tuesday, from 1030 to 1320 online
Wednesday, from 1030 to 1120 online
Friday, from 1030 to 1120 online

The class will meet electronically in Zoom:

Dr Professor is inviting you to a scheduled Zoom meeting.

Topic: General Chemistry III, evening
Time: This is a recurring meeting Meet anytime

Join Zoom Meeting
https://bellevuecollege.zoom.us/j/89308232035?pwd=MVdNY1l4MS9BdEpIOHU0T2FML3VGUT09

Meeting ID: 893 0823 2035

Passcode: 829688

One tap mobile
+12532158782,,89308232035# US (Tacoma)
+16699006833,,89308232035# US (San Jose)

Dial by your location

+1 253 215 8782 US (Tacoma)
+1 669 900 6833 US (San Jose)
+1 346 248 7799 US (Houston)
+1 646 558 8656 US (New York)
+1 301 715 8592 US (Washington DC)
+1 312 626 6799 US (Chicago)

Meeting ID: 893 0823 2035

Find your local number: https://bellevuecollege.zoom.us/u/kbYDjz5Cqb

Join by SIP
89308232035@zoomcrc.com

Join by H.323
162.255.37.11 (US West)
162.255.36.11 (US East)
115.114.131.7 (India Mumbai)
115.114.115.7 (India Hyderabad)
213.19.144.110 (Amsterdam Netherlands)
213.244.140.110 (Germany)
103.122.166.55 (Australia Sydney)
103.122.167.55 (Australia Melbourne)
149.137.40.110 (Singapore)
64.211.144.160 (Brazil)
149.137.68.253 (Mexico)
69.174.57.160 (Canada Toronto)

65.39.152.160 (Canada Vancouver)
207.226.132.110 (Japan Tokyo)
149.137.24.110 (Japan Osaka)
Meeting ID: 893 0823 2035
Passcode: 829688

Course Description: (6 credit hours) **Third** in a three-course chemistry sequence for science and engineering students. The 161/162/163 series covers chemical equilibrium of gas phase, multi-phase and aqueous reactions, acid-base reactions and buffer systems, thermodynamics, entropy, Gibbs free energy, electrochemistry and transition metal chemistry. Courses in the series take a quantitative approach, format includes lecture, discussion, and laboratory.

Course Outcomes

After completing this class, students should be able to:

- Explain how equilibrium concepts apply to chemical systems, including acids and bases, slightly soluble ionic compounds, and complex ions.
- Solve word problems for chemical systems at equilibrium to determine equilibrium constants, pH, and concentrations.
- Predict and quantify the chemical behavior of acids and bases in aqueous solutions.
- Discuss and quantify the effects of the thermodynamic properties of enthalpy, entropy, and free energy on chemical equilibria.
- Analyze the relationship between cell potential, free energy, and the equilibrium constant for electrochemical redox reactions in aqueous and electrochemical systems.
- Combine valence bond theory and crystal field theory to examine magnetism, color, and biochemical and industrial applications in coordination compounds.
- Develop laboratory practices for conducting experiments and reporting experimental results within the context of the scientific method (including the proper application of significant figures, precision, and accuracy).
- Use laboratory generated data and supporting activities to reach sound conclusions about chemical phenomena, models, concepts, and theories.

How Outcomes Will be Met

Students will be introduced to a variety of topics in general chemistry through a combination of lectures, labs, and activities. Homework assignments and in class assessments will be given in order to reinforce the concepts presented in class. The class time in this course will be primarily devoted to the most effective methods available for learning according to the best research available on education. This includes POGIL and other active learning strategies. There will be a mandatory comprehensive final exam. This is an interactive class and will involve group work.

Grading

Sick Day/Personal Day/Floating Holiday Policy It is typical in a college or university class that work will not be accepted after the deadline and that no make-up of missed work will be allowed. However, everyone suffers some amount of woe due to events outside of their control. This Policy seeks to ameliorate the deleterious consequence of these events. The policy applies to the categories of lab, homework, midterm exam, and online quizzes & in class work. The mechanism of the policy is that the lowest grade in each of the applicable categories is replaced by the average of the remaining scores in that category. Therefore, if a student were to miss a midterm exam, the student would earn a zero on the exam, but the score of zero would be replaced by the average of the other two midterm exams. Even if a student does not miss any work in a category, the lowest score is still 'dropped' in this way. For the category of in-class quizzes & group work, the two lowest grades will be so replaced. No make-up of missed work is allowed, if it were then the lowest would not be dropped – dropping the lowest score in a category is my way of excusing an absence. Normally the number of dropped items in a category would not be increased, even if it would seem otherwise reasoanable to do so. If a student misses multiple items for extreme reasons, a grade of Incomplete may be possible.

Exams (three midterm exams 90 pts each, final exam 180 pts) No make-up exams. The final exam is mandatory and must be taken on the scheduled date. Exams will be closed to notes and books. Exam questions may include multiple choice questions, short answer questions or questions that require written (essay) responses. A significant fraction of the questions will require calculations.

Homework Assignments (100pts of course grade) Online homework problem sets will be completed using Mastering Chemistry[MC]. Starting with the **2021-10-11**, an online homework assignment will be due at 2350 (11:50 PM) on each **Monday**. Working out solutions in a notebook while doing the MC assignments is recommended. It will not be possible to earn credit for online homework which is submitted late.

Laboratory (150 pts of course grade)

Online labs: All labs this quarter may be done online. Starting on **2021-10-12**, a lab will be due at 2350 (11:50 PM) on each **Tuesday**., The due dates are also published on Canvas. The documentation required to complete the lab submissions will be made available on canvas, usually one week before the lab is due or earlier. Each student will complete their lab individually. The components of the lab will be submitted electronically on canvas. Up to two of the labs may be submitted late, up to one week late.

Optional on campus labs:

For some of the labs this quarter, you may do the lab on campus. If you do the lab on campus you will earn 100% for the lab and no submission of a lab report will be required. Makeup labs are not possible. Lab experiment information will be posted on canvas. Safety rules will discussed in lab. Failure to follow lab rules may result in you being asked to leave lab, without the option of turning in the lab report for that week.

Active Learning Assignments (50pts of course grade) Every week there will be two or more Active Learning Assignments. These assignments will be submitted on canvas. Make sure you change what you add to the document to a blue font. It is most effective to work on these assignments with a team of three of four total students. These activities must be done in groups via Zoom to earn full credit. Groups that do not complete an activity during class are permitted to work on it together after class or some other time when your team members can meet.

Frequent Quizzes (50pts of course grade) Every week there will be one or more online quizzes. These quizzes will cover the content of the most recent active learning assignment. These quizzes will be done individually. Do the quizzes by yourself, without notes or other references.

The College Grading Policy can also be found at this link: Grading Policy

A	A^-	B^+	B	B^-	C^+	C	C^-	D^+	D	F
95+	90-95	87-89	83-86	80-82	77-79	73- 76	70-72	67-69	60-66	0-59

Books and Materials Required

Course website: https://bc.instructure.com/
Required: Text book: Tro, Nivaldo; Chemistry Structure and Properties, 2nd Edition, Pearson
Required: Mastering Chemistry access for online homework: See below
Required: Soft-side safety goggles with splash guards (available at bookstore)
Required: Scientific or graphing calculator

Help with Canvas

Students can find help with Canvas by following the link here: Student Canvas Help

Classroom Learning Atmosphere

Student Responsibilities

Attendance: *Students are expected to make every attempt to be at all class meetings. It is the very rare instance that a student can do well in a course by attending class seldom or never. If you miss a class, it is* ***your responsibility*** *to obtain class notes, handouts, assignments, announcements, etc. from other classmates or our online website. Points will be awarded for participation in group work when hand-outs are distributed and/or collected. You must be present for points to be awarded. Doing the handout alone at home does not constitute discussion participation.*

Conduct*: Rudeness, tardiness, chatter during lecture, and disrespect make learning difficult for everyone around you, and will not be tolerated.* ***This also applies to cellular phones and beepers; turn these devices off during our class.*** *Non-alcoholic beverages and snack foods are permitted in the classroom but NOT in the lab – any food you bring to the classroom needs to be non-distracting.*

Accessibility

The online elements of this course are designed to be welcoming to, accessible to, and usable by everyone, including students who are English-language learners, have a variety of learning styles, have disabilities, or are new to online learning. Be sure to let me know immediately if you encounter a required element or resource in the course that is not accessible to you. Also,

let me know of changes I can make to the course so that it is more welcoming to, accessible to, or usable by students who take this course in the future.

Affirmation of Inclusion

Bellevue College is committed to maintaining an environment in which every member of the campus community feels welcome to participate in the life of the college, free from harassment and discrimination.

We value our different backgrounds at Bellevue College, and students, faculty, staff members, and administrators are to treat one another with dignity and respect.

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 accommodations 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/).

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/)

[Spanish and Chinese versions of the anti-discrimination notice are available at Equal Opportunity should you wish to link to them or include them in your syllabus.]

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/).

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

Division Statements

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. If you cheat, the following actions will be taken: 1. You will receive a grade of "0" on the work (exam, assignment, lab, quiz, etc.) where the cheating occurred. This grade cannot be dropped. 2. A report of the incident will be sent to the Dean of Student Success. The Dean may file the report in your permanent record or take further disciplinary action such as suspension or expulsion from the college. If you feel you have been unfairly accused of cheating, you may appeal. (For a description of due process, see WAC 132H-120 and/or the Student Handbook.) *Cheating includes, but is not limited to, copying answers on tests or assignments, glancing at nearby test papers, swapping papers, stealing, plagiarizing, lying, use of electronic information storage or communication devices to store or share answers and illicitly giving or receiving help on exams or assignments

Information about Bellevue College's copyright guidelines can be found at: College Copyright Policy

This link provides a good, short summary of how to avoid plagiarism: Avoiding Plagiarism

This 22-minute video also provides a good overview of how to avoid trouble when using sources: From the college home page select SERVICES, then LIBRARY MEDIA CENTER, then DATABASES, then FILMS ON DEMAND. At their site, search by title for PLAGIARISM 2.0: ETHICS IN THE DIGITAL AGE.

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

Important Links

See "Important Links" page online for more information about the E-mail and MyBC, Public Safety, the Academic Calendar, the Academic Success Center, and more.

[If you prefer to include the Important Links within your syllabus, delete this entire section and replace it here with the text from the Important Links page or add the pages to the end of your syllabus.]

Bellevue College E-mail and access to MyBC

All students registered for classes at Bellevue College are entitled to a network and e-mail account. Your student network account can be used to access your student e-mail, log in to computers in labs and classrooms, connect to the BC wireless network and log in to *My*BC. To create your account, go to: Create Email

BC offers a wide variety of computer and learning labs to enhance learning and student success. Find current campus locations for all student labs by visiting the Technology Help Desk

Disability Resource Center (DRC)

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 B Room 132. 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. 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).

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.

Public Safety

Public Safety is located in the K building and can be reached at 425-564-2400 (easy to remember because it's the only office on campus open 24 hours a day—2400). Among other things, Public Safety serves as our Parking Permits, Lost and Found, and Emergency Notification center. Please ensure you are signed up to receive alerts through our campus alerting system by registering at RAVE Alert Registration

If you work late and are uneasy about going to your car, Public Safety will escort you to your vehicle. To coordinate this, please phone ahead and let Public Safety know when and where you will need an escort.

Please familiarize yourself with the emergency postings by the door of every classroom and know where to go in the event of an evacuation. Your instructor will be asked if anyone might still be in the building, so check in before you do anything else. Emergency responders will search for anyone unaccounted for.

If a major emergency occurs, please follow these three rules:

1) Take directions from those in charge of the response -We all need to be working together.

2) Do not get in your car and leave campus (unless directed to) - Doing so will clog streets and prevent emergency vehicles from entering the scene. Instead, follow directions from those in charge.

3) In an emergency, call 911 first, then Public Safety.

Please do not hesitate to call Public Safety if you have safety questions or concerns at any time. You may also visit the Public Safety web page for answers to your questions.

Final Exam Schedule

The official Final Exam Schedule states that our exam will be during our normal class time.

Our Final Exam will be on Thursday, **2021-12-16**, starting at **0930**.

If you miss the Final Exam, you will get a zero on the Final Exam

Course Calendar (tentative schedule)

Week 01		In Class Activity:	
2021.09.27	Monday	Le Chatlier	
2021.09.28	Tuesday	Q and K	AL Le Chatlier
2021.09.29	Wednesday	RICES	AL Q and K
2021.09.30	Thursday		Quiz Le Chatlier
2021.10.01	Friday		Quiz Q and K
2021.10.02	Saturday		AL RICES,
2021.10.03	Sunday		
Week 02			
2021.10.04	Monday	Solubility	Quiz RICES
2021.10.05	Tuesday		AL Solubility
2021.10.06	Wednesday	Formation	
2021.10.08	Thursday		Quiz Solubility
2021.10.08	Friday		
2021.10.09	Saturday		AL Formation,
2021.10.10	Sunday		
Week 03			
2021.10.11	Monday	Ka and Kb	HW 01, Quiz Formation
2021.10.12	Tuesday		Lab X02, AL Ka and Kb
2021.10.13	Wednesday	Introduction to Acid/Base	
2021.10.14	Thursday		Quiz Ka and Kb,
2021.10.15	Friday		
2021.10.16	Saturday		AL Intro to A/B
2021.10.17	Sunday		

Week 04		In Class Activity:	**Due:**
2021.10.18	Monday	pH Calculations	HW 02, Quiz Intro to Acid/Base
2021.10.19	Tuesday		Lab X01, AL pH Calculations
2021.10.20	Wednesday	Mixtures	
2021.10.21	Thursday		Quiz pH Calcs,
2021.10.22	Friday		
2021.10.23	Saturday		AL Mixtures
2021.10.24	Sunday		
Week 05			
2021.10.25	Monday	Titrations	HW 03, Quiz Mixtures
2021.10.26	Tuesday		Lab X03, AL Titrations
2021.10.27	Wednesday	EXAM I	
2021.10.28	Thursday		Quiz Titrations
2021.10.29	Friday		
2021.10.30	Saturday		
2021.10.31	Sunday		
Week 06			
2021.11.01	Monday	Buffers	HW 04
2021.11.02	Tuesday		Lab X05, AL Buffers
2021.11.03	Wednesday	Complex Salts	
2021.11.04	Thursday		Quiz Buffers
2021.11.05	Friday		
2021.11.06	Saturday		AL Complex Salts,
2021.11.07	Sunday		

Week 07		In Class Topic:	**Due:**
2021.11.08	Monday	Thermodynamics	HW 05, Quiz Complex Salts
2021.11.09	Tuesday		Lab X04, AL Thermodynamics
2021.11.10	Wednesday	Redox Reactions	
2021.11.11	Thursday		Quiz Thermodynamics
2021.11.12	Friday		
2021.11.13	Saturday		AL Redox,
2021.11.14	Sunday		
Week 08			
2021.11.15	Monday	Electrochemical Cells I	HW 06, Quiz Redox Reactions
2021.11.16	Tuesday		Lab X06, AL Electrochemical Cells I
2021.11.17	Wednesday	EXAM II	
2021.11.18	Thursday		Quiz Electrochemical Cells I
2021.11.19	Friday		
2021.11.20	Saturday		
2021.11.21	Sunday		
Week 09			
2021.11.22	Monday	Electrochemical Cells II	HW 07
2021.11.23	Tuesday		Lab X07, AL Electrochemical Cells II
2021.11.24	Wednesday	Coordination Compounds I	
2021.11.25	Thursday		Quiz E Cells II,
2021.11.26	Friday		
2021.11.27	Saturday		AL Coord. Cmpds I
2021.11.28	Sunday		

Week 10		In Class Topic:	**Due:**
2021.11.29	Monday	Coordination Compounds II	HW 08
2021.11.30	Tuesday		Lab X09, AL Coord. Compounds II
2021.12.01	Wednesday	Review	
2021.12.02	Thursday		Quiz Coordination Compounds
2021.12.03	Friday		
2021.12.04	Saturday		
2021.12.05	Sunday		
Week 11			
2021.12.06	Monday	Review	HW 09
2021.12.07	Tuesday		
2021.12.08	Wednesday	EXAM III	
2021.12.09	Thursday		
2021.12.10	Friday		
2021.12.11	Saturday		
2021.12.12	Sunday		
Week 11			
2021.12.13	Monday	**STUDENT SUCCESS DAY**	
2021.12.14	Tuesday		
2021.12.15	Wednesday		
2021.12.16	Thursday	FINAL EXAM **(0930)**	
2021.12.17	Friday		
2021.12.18	Saturday		
2021.12.19	Sunday		

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