Course Syllabus
Chaminade University Honolulu
3140 Waialae Avenue - Honolulu, HI 96816
www.chaminade.edu

Course Number: CH 203 *(Cross-listed with BC 203)*
Course Title: General Chemistry I
School Name: Natural Sciences and Mathematics
College/School/Division Name: NSM, Division of Chemistry and Biochemistry
Term: Fall 2021
Course Credits: 3
Class Meeting Days/Location/Time for each section:

Section 01	Monday, Wednesday, Friday	Henry Hall	9:30–10:20 AM

Instructor Name: Francis Sakai-Kawada
Email: francis.sakai-kawada@chaminade.edu
Phone: 808-735-4868
Office Location: Eiben 207D
Office Hours:

Monday, Wednesday, Friday	10:30 – 11:20 AM
OR by appointment	

1. University Course Catalog Description

A study of the general concepts and basic principles of chemistry: properties of matter, atomic and molecular structure, theories of bonding, chemical reactions and stoichiometry, equilibria, and ions in aqueous solution *Cross-listed with BC 203.*

2. Course Overview

BC/CH 203 is the first half of a two semester, college-level general chemistry course. In class, we will discuss the basic concepts of chemistry with an emphasis on problem solving. CH 203/204 is suitable for students planning careers in science, medicine, engineering, or other areas requiring a general chemistry background. Students should bring writing materials and a calculator to each class meeting. *3 credits*

3. Course Prerequisites

- Completion of MA 103
- Concurrent registration in CH 203L required

4. Required Learning Materials

- Textbook (eBook with minimum of 1-year access with online ALEKS): Chang & Goldsby, CHEMISTRY, 13e, McGraw-Hill
- Scientific calculator
- Computer and/or smartphone with web/app access to CANVAS (PowerPoint Lecture Files)

5. Course Website:

www.aleks.com

Class Code: V949H-WE4P6

6. Technical Assistance for Canvas Users:

- Search for help on specific topics at help.instructure.com
- Chat live with Canvas Support 24/7/365
- Watch this video to get you started with online guides and tutorials
- Contact the Chaminade IT Helpdesk for technical issues: helpdesk@chaminade.edu, or call (808) 735-4855

7. Assessment

The course grades will be based on the following weighted scale. Any changes will be announced in class.

Assignment	Weighted Percent
Online Homework	20%
Quizzes	20%
Exams	60%

Students can expect timely and regular feedback on homework, quizzes, and exams.

Grading Scale

GRADE	Percentage	
A	90 – 100%	Outstanding scholarship and an unusual degree of intellectual initiative
B	80 – 89%	Superior work done in a consistent and intellectual manner
C	65 – 79%	Average grade indicating a competent grasp of subject matter
D	45 – 64%	Inferior work of the lowest passing grade, not satisfactory for fulfillment of prerequisite course work
F	Below 45%	Failed to grasp the minimum subject matter; no credit given

Homework: Several homework assignments will be given throughout the semester. It is important that they are turned in by the due dates or they will not be accepted for credit.

Quizzes: There will be short quizzes given this semester after every chapter. The quizzes will consist of several problems covering material previously discussed in class.

Midterm Exams: There will be three midterm exams given this semester. Each will be worth 100 points and you will be responsible for all lecture material covered up to the exam dates. These exams are tentatively scheduled on **September 17th, October 15th,** and **November 8th**. More information about these exams will be given in class.

Final Exam: The final exam is on **Monday, December 6th from 11:00am – 1:00pm**.
This exam will be cumulative and will be worth 150 points.

8. Program Learning Outcomes

A) Chemistry Mission Statement

Chemistry has justifiably been labeled 'The Central Science'. Training in this discipline is therefore beneficial for all citizens of the modern world. All materials in the universe are made up of chemicals; a knowledge of chemistry is indeed a knowledge of ourselves.
The mission of this program is to:

- Promote molecular literacy (i.e., awareness of the importance of physical, chemical, and biological changes on the atomic and molecular scale)
- Provide hands-on laboratory training using modern chemical techniques and instrumentation
- Engage students in an undergraduate research program
- Enable students to integrate knowledge of the physical world
- Educate about the entry requirements, career pathways, and progression into advanced education in the chemical sciences

B) Program Learning Outcomes in Chemistry

Upon completion of the undergraduate program in Chemistry, students will be able to:

1. Apply the scientific method as it is used in organic chemistry, inorganic chemistry, analytical chemistry, physical chemistry, and molecular sciences
2. Recognize and explain chemical theory as it applies to the physical world
3. Visualize, evaluate, validate, and interpret results of chemical analyses as part of an integral and quality education (This PLO is a link to our Marianist Values of to provide an integral, quality education)
4. Solve problems using analytical reasoning, professional resources, professional conduct, and ethical behavior
5. Communicate chemical information effectively in oral and written formats

C) Program Learning Outcomes in Chemistry

Upon completion of the undergraduate program in Chemistry, students will be able to:

Course Learning Outcomes	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**	**PLO 5**
1. Determine the number of subatomic particles in a given isotope of any element.	X	X	X	X	X
2. Write chemical formulas and give the chemical name of ionic and simple molecular compounds.	X	X	X	X	X
3. Understand and apply the mole concept in a variety of chemical calculations, including the calculation of the number of particles in a given mass of substance, and the quantitative relationship between reactants and products in a chemical reaction.	X	X	X	X	
4. Recognize the different types of chemical reactions: acid-base, precipitation, and redox reactions.	X	X		X	
5. Perform gas law calculations.	X	X	X	X	
6. Understand the basic principles of energy transfer involving chemical systems, including the First Law of Thermodynamics and the application of Hess's Law.	X	X	X	X	X
7. Understand the various models of atomic structure and the basic principles of quantum theory.	X	X	X	X	
8. Write ground-state electron configurations for atoms and ions of any representative element and the 3d transition metals.	X	X	X	X	
9. Explain the differences in ionic and covalent bonding in compounds.	X	X	X	X	X
10. Draw electron dot structures for simple molecules.	X	X	X	X	X

D) Marianist Values (MVs) and Native Hawaiian Values (NHVs) for CH 203

The Natural Sciences Division provides an *integral, quality education:* sophisticated integrative course content taught by experienced, dedicated, and well-educated instructors.

- We *educate in family spirit* – every classroom is an *Ohana* and you can expect to be respected yet challenged in an environment that is supportive, inclusively by instructors who take the time to personally get to know and care for you.
- We *educate for service, justice, and peace*, since many of the most pressing global issues (climate change, health inequity, poverty, justice) are those which science and technology investigate, establish ethical parameters for, and offer solutions to.
- We *educate for adaptation and change*. In science and technology, the only constant is change. Data, techniques, technologies, questions, interpretations, and ethical landscapes are constantly evolving, and we teach students to thrive on this dynamic uncertainty.

The study of science and technology can be formative, exploring human creativity and potential in the development of technologies and scientific solutions, the opportunity to engage in the stewardship of the natural world, and the opportunity to promote social justice. We provide opportunities to engage with the problems that face Hawai‘i and the Pacific region through the Natural Sciences curriculum, in particular, those centered around severe challenges in health, poverty, environmental resilience, and erosion of traditional culture. The Marianist Educational Values relate to Native Hawaiian ideas of *mana, na‘auao, ohana*, *aloha* and *aina*. We intend for our Natural Sciences programs to be culturally-sustaining, rooted in our Hawaiian place, and centered on core values of *Maiau,* be neat, prepared, careful in all we do; *Makawalu*, demonstrate foresight and planning; ‘*Ai,* sustain mind and body; *Pa‘a Na‘au*, learn deeply

9. Course Policies

Late Work Policy

Requests for extensions due to extenuating circumstances (documented computer or medical problems, for example) will be considered but in general work received after the deadline will not be graded. Students should notify their instructors when illness or other extenuating circumstances prevents them from attending class and make arrangements to complete missed assignments. Tardiness – failure to be on time for class may result in loss of participation points and even quiz/exam points as additional time will not be given, nor will makeup quizzes be given for students who are tardy.

Grades of "Incomplete"

Students and instructors may negotiate an incomplete grade when there are specific justifying circumstances. When submitting a grade the “I” will be accompanied by the alternative grade that will automatically be assigned after 90 days. These include IB, IC, ID, and IF. If only an “I” is submitted the default grade is F. The completion of the work, evaluation, and reporting of the final grade is due within 90 days after the end of the semester or term. This limit may not be extended.

Writing Policy

Plagiarism will not be tolerated and will be checked.

Instructor and Student Communication

Questions for this course can be emailed to the instructor at [francis.sakai-kawada@chaminade.edu]. Online, in-person and phone conferences can be arranged. Response time will take place up to [1-12 hours].

Cell phones, tablets, and laptops

Music Devices and Cellular Phones: Unless specifically permitted by your instructor, use of music devices and cell

phones is prohibited during all Natural Science and Mathematics classes, as it is discourteous and may lead to suspicion of academic misconduct. Students unable to comply will be asked to leave class.

Out of consideration for your classmates, please set your cell phone to silent mode during class. Students are encouraged to bring laptops or tablets to class as the instructor will assign online activities and readings that will require the use of a laptop or tablet. Laptops and tablets should not be misused, such as checking distracting websites. Use your best judgment and respect your classmates and instructor.

ADA Policy

Chaminade University of Honolulu is committed to providing reasonable accommodations for persons with documented disabilities. If you need individual accommodations to meet course outcomes because of a documented disability, please speak with me to discuss your needs as soon as possible so that we can ensure your full participation in class and fair assessment of your work. Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from Kōkua ʻIke by the end of week three of the class, in order for instructors to plan accordingly. If a student would like to determine if they meet the criteria for accommodations, they should contact the Kōkua ʻIke Coordinator at (808) 739-8305 for further information (ada@chaminade.edu).

Title IX Compliance

Chaminade University of Honolulu recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated at CUH. If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. If you or someone you know has been harassed or assaulted, you can find the appropriate resources by visiting Campus Ministry, the Dean of Students Office, the Counseling Center, or the Office for Compliance and Personnel Services.

Flexible Absence Policies

Normal policies around student absences will be flexible and adjusted to accommodate sick students and adhere to CDC and local public health guidance. Students will not be penalized due to absences related to illness or suspected illness.

Students should not come to campus when ill or potentially ill. Accommodations, including extended due dates and online instruction will be provided for anyone unable to attend class due to restrictions placed on them due to possible exposure to COVID-19.

Any student required to self-isolate should follow the CDC self-isolation recommendations and the directions of their health care provider. Students who are required to self-isolate should contact their faculty member.

In case of self-isolation for potential COVID-19 exposure or symptoms, students and faculty should use and complete the CDC Symptom Monitoring Worksheet

Students with disabilities who have obtained accommodations from the Chaminade University of Honolulu ADA Coordinator may be considered for an exception when the accommodation does not materially alter the attainment of the learning outcomes. Federal regulations require continued attendance for continuing payment of financial aid. When illness or personal reasons necessitate continued absence, the student should communicate first with the instructor to review the options. Anyone who stops attending a course without official withdrawal may receive a failing grade or be withdrawn by the instructor at the instructor's discretion.

Academic Conduct Policy

From the 2020-2021 Undergraduate Academic Catalog (p. 13):

Campus life is a unique situation requiring the full cooperation of each individual. For many, Chaminade is home, school, recreation center, and work, all in one. That makes it a community environment in which the actions of one student may directly affect other students. Therefore, each person must exercise a high degree of responsibility. The university expects students to remain in good conduct standing, which is defined as not currently being under a resolution status (i.e., student conduct probation, suspension, or expulsion). Please refer to the Student Handbook for more details. A copy of the Student Handbook is available on the Chaminade website.

For further information, please refer to the Student Handbook: https://chaminade.edu/wp-content/uploads/2021/04/NEW-STUDENT-HANDBOOK-20-21-Final-3.31.2021.pdf

Course Schedule Fall 2021

The Professor may modify elements of this syllabus according to the operational needs of the class

Week	Date	TOPICS (Tentative Schedule)	Due Dates:
1	**08/23**	Course Introduction: Syllabus	
	08/25	Lecture: Ch 1 Chemistry: The Study of Change (Part I)	
		Homework 1: Chapter 1	*08/25 – 08/31*
	08/27	Lecture: Ch 1 Chemistry: The Study of Change (Part II)	
2	**08/30**	Lecture: Ch 1 Chemistry: The Study of Change (Part III)	
		Quiz 1: Chapter 1	
	09/01	Lecture: Ch 2 Atoms, Molecules, and Ions (Part I)	
		Homework 2: Chapter 2	*09/01 – 09/16*
	09/03	Lecture: Ch 2 Atoms, Molecules, and Ions (Part II)	
3	**09/06**	***HOLIDAY: LABOR DAY***	
	09/08	Lecture: Ch 2 Atoms, Molecules, and Ions (Part III)	
	09/10	Lecture: Ch 2 Atoms, Molecules, and Ions (Part IV)	
		Quiz 2: Chapter 2	
4	**09/13**	Review: Chapter 1 and 2	
	09/15	Q&A for Exam 1	
	09/17	**Midterm Exam 1: Chapter 1 and 2**	
5	**09/20**	Lecture: Ch 3 Mass Relationships in Chemical Reactions (Part I)	
		Homework 3: Chapter 3	*09/20 – 09/28*
	09/22	Lecture: Ch 3 Mass Relationships in Chemical Reactions (Part II)	
	09/24	Lecture: Ch 3 Mass Relationships in Chemical Reactions (Part III)	
6	**09/27**	Lecture: Ch 3 Mass Relationships in Chemical Reactions (Part IV)	
		Quiz 3: Chapter 3	
	09/29	Lecture: Ch 4 Reactions in Aqueous Solutions (Part I)	
		Homework 4: Chapter 4	*09/29 – 10/14*
	10/01	Lecture: Ch 4 Reactions in Aqueous Solutions (Part II)	
7	**10/04**	Lecture: Ch 4 Reactions in Aqueous Solutions (Part III)	
	10/06	Lecture: Ch 4 Reactions in Aqueous Solutions (Part IV)	
		Quiz 4: Chapter 4	
	10/08	Review: Chapter 3 and 4	
8	**10/11**	***HOLIDAY: DISCOVERER'S DAY***	
	10/13	Q&A Exam 2	
	10/15	**Midterm Exam 2: Chapter 3 and 4**	
9	**10/18**	Lecture: Ch 5 Gases (Part I)	
		Homework 5: Chapter 5	*10/18 – 10/26*
	10/20	Lecture: Ch 5 Gases (Part II)	
	10/22	Lecture: Ch 5 Gases (Part III)	
10	**10/25**	Lecture: Ch 5 Gases (Part IV)	
		Quiz 5: Chapter 5	
	10/27	Lecture: Ch 6 Thermochemistry (Part I)	
		Homework 6: Chapter 6	*10/27 – 11/07*
	10/29	Lecture: Ch 6 Thermochemistry (Part II)	
11	**11/01**	Lecture: Ch 6 Thermochemistry (Part III)	
		Quiz 6: Chapter 6	

	11/03	Review: Chapter 5 and 6	
	11/05	Q&A Exam 3	
12	**11/08**	**Midterm Exam 3: Chapter 5 and 6**	
	11/10	Lecture: Ch 7 Quantum Theory and the Electronic Structure of Atoms (Part I)	
		Homework 7: Chapter 7	*11/10 – 11/18*
	11/12	Lecture: Ch 7 Quantum Theory and the Electronic Structure of Atoms (Part II)	
13	**11/15**	Lecture: Ch 7 Quantum Theory and the Electronic Structure of Atoms (Part III)	
	11/17	Lecture: Ch 7 Quantum Theory and the Electronic Structure of Atoms (Part IV)	
		Quiz 7: Chapter 7	
	11/19	Lecture: Ch 8 Periodic Relationships Among the Elements (Part I)	
		Homework 8: Chapter 8	*11/19 – 12/01*
14	**11/22**	Lecture: Ch 8 Periodic Relationships Among the Elements (Part II)	
	11/24	Lecture: Ch 8 Periodic Relationships Among the Elements (Part III)	
	11/26	***HOLIDAY: THANKSGIVING RECESS***	
15	**11/29**	Lecture: Ch 8 Periodic Relationships Among the Elements (Part IV)	
		Quiz 8: Chapter 8	
	12/01	Review: Chapter 7 and 8	
	12/03	Last Day of Instruction Q&A for Final Exam	
16	**12/06**	**FINAL EXAM: Monday, December 6 (11:00am – 1:00pm)**	