

**NATURAL SCIENCES DEPARTMENT
PHYSICAL SCIENCES UNIT
HOSTOS COMMUNITY COLLEGE
THE CITY UNIVERSITY OF NEW YORK
Semester/ Year**

CHE 110 Sec: Introduction to Chemistry
Credits: 4.0 credits, 3-hr lecture/ 2-hr laboratory/ 1-hr Recitation
Required core : Life and Physical Sciences
Pre-requisite: MAT 100 or Higher

Course Instructor:

Lecture	Day:	Time:	Room
Email:			
Office hours:			
Phone:			
Contact Policy:	<ul style="list-style-type: none">○ When sending an e-mail, be sure to put key information in the Subject area. Make sure to include your full name and class section. Use your Hostos e-mail. I will answer your message in less than 48 hours.○ When requesting an appointment outside my office hours, speak to me before you come. Notify me immediately if you need to cancel or change an appointment.○ If you need to reach me by phone, please leave a brief message with your contact information. I will get back to you.		

COURSE DESCRIPTION:

The student will solve problems and analyze data, which require knowledge of the General Chemistry, and Inorganic Chemistry which include principles of Scientific Measurements, Atomic Theory, Chemical Bonding, Nuclear Chemistry, Gas Laws, Solutions and concept of Acids & Bases. The student will also recognize the introductory knowledge of different classes of Organic Compounds. The student will also be able to classify organic compounds using the IUPAC method of classification. This course is designed for entry into the Dental Hygiene Program. This course is offered in English only.

STUDENT LEARNING OUTCOMES

Required Core Learning Outcomes for Life and Physical Sciences:

Student will:

- Identify and apply the fundamental concepts and methods of a life or physical science.

- Apply the scientific method to explore natural phenomena, including hypothesis development, observation, experimentation, measurement, data analysis, and data presentation.
- Use the tools of a scientific discipline to carry out collaborative laboratory investigations.
- Gather, analyze, and interpret data and present it in an effective written laboratory or fieldwork report.
- Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.

Discipline Specific learning Outcomes

By the end of the course, students will:

- develop the capabilities to solve problems by combining several concepts in chemistry.
- develop the techniques to think critically about a problem, devise a strategy for solving it, and assess whether the results make sense.
- be able to relate chemistry to all areas of science.
- be able to unify the diverse topics of chemistry.
- be able to formulate the atomic theory of matter and develop an understanding of chemical formulas and formula weight.
- be able to balance chemical equations and solve problems involving these equations.
- Learn the periodic properties of the elements and the basic concepts of chemical bonding.
- Formulate and interpret the various gas laws and have the ability to apply them to real life situations.
- formulate the various facets of the Kinetic Molecular theory and its significance and application to real problems.
- be able to solve problems ranging from simple to complex calculations based on the materials covered.
- learn to use chemical terminology to explain aspects ranging from engineering problems to everyday life situation.

TEXTBOOK: <https://guides.hostos.cuny.edu/che105>

Zero-Cost (Open Educational Resources): The Saylor Foundation under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License

LAB MANUAL: <https://guides.hostos.cuny.edu/che105/labs>

Lecture Course Outline

<u>DATE</u>	<u>CHAPTERS # Sections</u>	<u>Homework Problems</u>
Week 1	Chapter 1: Measurements	Odd number Exercise
Week 2	Chapter 2: Energy and Matter (selective)	Odd number Exercises

Week 2	Chapter 3: Solids and Liquids (selective)	Odd number Exercises
Week 3:	Chapter 4: Atoms, Molecules and Ions	Odd number Exercises
	EXAM I: 1,2,3 and 4	TBA
Week 4-5	Chapter 5: Chemical Reactions and Equations	Odd number Exercises
Week 6-7	Chapter 6: Stoichiometry and the Mole	Odd number Exercises
Week 8:	Chapter 7: Nuclear Chemistry	Odd number Exercises
Week 9:	Chapter 8: Chemical Bonds	Odd number Exercises
	EXAM II: chapters 5,6,7 and 8	TBA
Week 10:	Chapter 9: Gases	Odd number Exercises
Week 11:	Chapter 10: Solutions	Odd number Exercises
	EXAM III : chapters 9 and 10	TBA
Week 12:	Chapters 11 Acids and Bases	Odd number Exercises
Week 13:	Chapter 13: Introduction to Organic Chemistry	Odd number Exercises
Week 14:	EXAM IV : chapters 11, and 13	TBA
Week 14:	Review	
	Final Exams Week (Cumulative; all chapters) Date and Time will be announced prior to Final Exams Week	TBA

Lab schedule Outline

B. LABORATORY SCHEDULE

Laboratory manual: <https://guides.hostos.cuny.edu/che105>

DATE	LAB NUMBER	TITLE	Homework
WEEK 1		Drawer assignment Discussion of Safety Rules for Laboratory Sessions Attendance and Grading Policies	Pre-lab study questions for lab 1
Week 2	1	Lab 1: Measurements (Parts A, B and C)	Complete lab report 1 sheet Study lab 2 and complete pre-lab questions

WEEK 3	1	Lab 1: Measurements (D)	Complete lab report sheet Study lab 2 part C
WEEK 4	2	Lab2: Density of liquids and solids	Complete lab report sheet Study lab 3 and complete pre-lab questions
WEEK 5	3	Quiz #1 Lab 3: Nomenclature, periodic table	To be completed at home if needed Study lab 4 and complete pre-lab questions
WEEK 6	3, 4	Lab 4 Flame test of metal cations; and Lab3 molecular shapes (Worksheet)	Complete lab report sheet Study lab 5 and complete pre-lab questions
WEEK 7	5	Lab 5: Stoichiometry	Complete lab report sheet Study lab 6 and complete pre-lab questions
WEEK 8	6	Lab 6: Experimental determination of the gas constant	Record your results/prepare your own lab report Study lab 7
WEEK 9	7	Quiz #2 Lab 7: Electrical conductivity of aqueous solutions	Complete lab report sheet Study lab 8 and complete pre-lab questions
WEEK 10	8	Lab 8: Solution concentrations, dilutions and dialysis	Complete lab report sheet Study lab 9 and complete pre-lab questions
WEEK 11	9	Quiz #3 Lab 9: Acids Bases, and pH	Complete lab report sheet Study lab 10 and complete pre-lab questions
WEEK 12	10	Lab 10: Titration of vinegar	Complete lab report sheet Study lab 11 and complete pre-lab questions
WEEK 13	11	Lab 11: Physical and chemical properties of hydrocarbons	Complete lab report sheet Study for last quiz

WEEK 14		Quiz#4 CLEAN UP AND CHECK OUT	
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GRADE DISTRIBUTION

The Final grade will be determined by the grades on lecture and lab combined as follows:

Lecture	75%
4 Partial Exams	50%
Final Exam	20%
Participation/Homework assignments*	5%
<i>(*The Participation/Assignments grade will be based on the student's class participation and completion of homework assignments).</i>	
Laboratory	25%
Lab Reports**	15%
4 Quizzes	5%
Final Lab Exam	5%

Total Grade Course **100%**

*(**Points will be taken off for each report that is handed in late. **The lab report is due at the beginning of the period following completion of the lab experience. 10% will be deducted for every week the report is late.**)*

The grade of Incomplete (I) is given in regular courses upon request of the student for personal emergencies that are verifiable. The faculty member has the responsibility to provide Inc grade only to those students **who are passing the course**. The student has the responsibility to take the initiative in completing the work, and is expected to make up the incomplete during the first semester in residence after receiving the grade of Incomplete. If the student does not make up the incomplete during the following semester after receiving it, **an F grade may be given by the faculty member without further consultation with the student**. If after the end of the first semester the Inc remains on the record it will be designated as an F and will be computed in the student's GPA.

Grade	GPA Value
A 93-100%	4.0
A- 90-92%	3.7
B+ 87-89%	3.3
B 83-86%	3.0
B- 80-82%	2.7
C+ 77-79%	2.3
C 70-76%	2.0
D 60-69%	1.0
F below 60%	0

There is no R grade in this course.

No student under any circumstances will be given a passing grade in this Chemistry course without taking and passing the laboratory. **Four (4) unexcused absences to lab are equivalent to an F.**

Assessment Tools:

A). Exams Quizzes and Final Exam:

Different types of questions such as short answers, written and multiple choice questions will be used to assess the following learning outcomes. Cumulative final exam will be used.

B) Participation/ Homework grade: It will be based on the student's attendance, participation, assignments, deadline observation, punctuality, active participation, pre- and post-homework assignments, and responses in relevant questions from textbooks and laboratory manual.

Assessed Learning outcome #1 - Identify and apply the fundamental concepts and methods of a life or physical science.

C). Hands on laboratory experiments, observations, data collection and data analysis, laboratory reports will be used to assess the following learning out comes:

Assessed Learning outcome #2, #3 and #4 –

#2. Apply the scientific method to explore natural phenomena, including hypothesis development, observation, experimentation, measurement, data analysis, and data presentation.

#3. Use the tools of a scientific discipline to carry out collaborative laboratory investigations.

#4. Gather, analyze, and interpret data and present it in an effective written laboratory or fieldwork report.

Tutorial and Counseling Services

Black Male Initiative (BMI) TEAM is a CUNY-wide program designed to unite Black and Latino STEM majors through mentoring, tutoring, and networking. The BMI TEAM offers free tutoring for all students online. Tutoring is also offered by the Hostos Academic Learning Center (HALC). Throughout the academic year, HALC also schedules workshops focusing on skills development, some of which are offered through the Writing Center.

Hostos Counseling Center offers a variety of services in English, Spanish, French and German, including individual and group counseling, crisis intervention, consultations and referrals to on- and off-campus resources. Please call (718) 518-4351 if you need any counseling support.

Students with Disabilities

As required by section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, reasonable accommodations are provided to ensure equal opportunity for students with verified disabilities. If you have a disability that requires accommodations, go to the Accessibility Resource Center in the Savoy Building, Room D101-L, 120 East 149th Street or call them at (718) 518-4454.

If you are already registered with Accessibility Services and have a letter from them verifying that you are a qualified student with a disability, please present the letter to the instructor as soon as possible. The instructor will work with you and Accessibility Services to plan and implement appropriate accommodations.

ACADEMIC INTEGRITY

Hostos Community College believes that developing student's abilities to think through issues and problems by themselves is central to the educational process. Since the Hostos College degree signifies that the student knows the material s/he has studied, and the practice of academic dishonesty results in grades or scores that do not reflect how much or how well the student has learned, understood, or mastered the material, the College will investigate any form of academic dishonesty brought to its attention. If the charge of academic dishonesty is proved, the College will impose sanctions. The three most common forms of academic dishonesty are cheating, plagiarism, and bribery.

In the collegiate setting, cheating is defined as the purposeful misrepresentation of another's work as one's own. Faculty and students alike are responsible for upholding the integrity of this institution by not participating either directly or indirectly in act of cheating and by discouraging others from doing so. Plagiarism is a form of cheating which occurs when persons, even if unintentionally, fail to acknowledge appropriately the sources for the ideas, language, concepts, inventions, etc. referred to in their own work. Thus, any attempt to claim another's intellectual or artistic work as one's own constitutes an act of plagiarism. In the collegiate setting, bribery involves the offering, promising, or giving of items of value, such as money or gifts, to a person in a position of authority, such as a teacher, administrator, or staff member, so as to influence his/her judgment or conduct in favor of the student. The offering of sexual favors in exchange for a grade, test score, or other academic favor, shall be considered attempted bribery. The matter of sexual favors, either requested or offered, in exchange for a grade, test score or other academic favor, shall also be handled as per the Sexual Harassment procedures of the College.

If you are suspected of plagiarism or cheating or if you attempt to bribe or influence your professor, you will be immediately reported to the college's Academic Integrity Officer. You will be unable to drop the class. The penalties range from an F with a score of 0 for an assignment to Failure for the entire term to expulsion from The City University of New York.

Students are expected to attend all class meeting in the courses for which they are registered.

Classes begin at the times indica

ted in the official schedule of classes. Arrival in class after the scheduled starting time constitutes lateness.

The maximum number of absences is limited to 15% of the number of scheduled class hours per semester and a student absent more than the indicated 15% is deemed excessively absent.

Attendance is monitored from the first official day of classes. In the case of excessive absences or lateness, the instructor has the right to lower the grade, assign a failing grade, or assign additional written work or readings.

Absences due to late registration, change of program, or extenuating circumstances will be considered on an individual basis by the instructor. Each department and program may specify in writing a different attendance policy. Instructors are required to keep an official record of student attendance and inform each class of the College's or department attendance policy.

