# SCC 201 General Chemistry I Syllabus - Spring I 2020

**LAGUARDIA COMMUNITY COLLEGE
CITY UNIVERSITY OF NEW YORK
NATURAL SCIENCES DEPARTMENT**

Note: This is a sample accessible syllabus. It applies some of the best practices for designing content for different types of disabilities. This syllabus passes the Word Accessibility Checker. This is not the actual syllabus for SCC 201 and should not be used.

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## Course Description

This course is part one of a two-semester sequence covering the basic concepts of chemistry and their historical development. The experimental nature of chemistry is stressed. Among the topics studied are atomic structure, chemical bonding and reactivity, quantitative relationships in chemical reactions, thermochemistry and gases.

The pre-requisites are: CSE 099, ENA/ENG 099, MAT 115/117.

## Instructor Information

* Instructor name and title
* E-mail address:
* Office room number:
* Phone:
* Office hours:

## Course Coordinator

* Name:
* Email:
* Office:
* Phone:

## Learning Objectives

Upon completion of the course, students should be able to:

1. Describe and explain the fundamental chemical concepts of matter and energy, behavior of gases, atomic structure, stoichiometry, chemical nomenclature, periodicity of elements, chemical bonding, solution concentrations, energy relationships in chemical reactions, oxidation and reduction.
2. Demonstrate an understanding of the quantitative nature of chemistry and the mathematical methods involved by being able to use the international standard of units (SI) measurement system, carry out unit conversions, apply the gas laws, employ the mole concept in chemical calculations, determine solution concentrations, solve problems based on balanced chemical equations and determine heats of reaction.
3. Explain the historical development of atomic theory and of the major laws encountered in introductory chemistry.
4. Perform basic laboratory skills such as the proper handling of chemicals, identification and use of standard laboratory equipment such as balances, thermometers and glassware for quantitative measurement, titration techniques and qualitative identification by physical and chemical properties.
5. Analyze and represent experimental data in tables and graphs, interpret experimental results and write laboratory reports.
6. Demonstrate an understanding of safety procedures in the laboratory.
7. Demonstrate an appreciation of the role of chemistry in various aspects of life.
8. Use computer applications in the study of chemistry including internet-based chemistry research, data analysis and graphing using Microsoft Excel, and computer-based self-study.

## Course Materials

All the materials listed below are required, unless noted as optional.

### Textbook (free)

[*Chemistry 2e*](https://openstax.org/details/books/chemistry-2e), by Paul Flowers, Klaus Theopold, Richard Langley, William R. Robinson, PhD (OpenStax, Feb 14, 2019, Houston, Texas) (https://openstax.org/details/books/chemistry-2e )

### Textbook (optional)

***Chemistry: The Central Science****,* ***14th Edition***, by Theodore L. Brown, H. Eugene LeMay, Jr., Bruce E. Bursten, Catherine J. Murphy, Patrick M. Woodward (Prentice-Hall, 2014)

Information on [different versions of Chemistry: The Central Science](http://www.mypearsonstore.com) are available on Pearson’s website (www.mypearsonstore.com).

### Tutorial Package

General Chemistry I, SCC 201 Tutorial Package.

[Buy tutorial from LAGCC bookstore](https://lagcc.bncollege.com/shop/lagcc1/page/find-textbooks) or [buy tutorial from the publisher](https://he.kendallhunt.com/scc201) (https://he.kendallhunt.com/scc201)

### Lab Manual

***General Chemistry I, SCC201 Laboratory Manual, Revised Edition***, by Dionne Miller and Kevin Mark (Kendall Hunt Publishing Company 2019)

Buy from LAGCC bookstore or [buy lab online](file:///C%3A%5CUsers%5Ctran%5CDocuments%5CLa%20Guardia%20CC%5C2021%20CUNY%20OER%20Grant%5CGrant%202%20Workplan%5CCopyright%20UDL%20workshop%20Xin%20Gao%5Cbuy%20lab%20online) from the publisher (https://he.kendallhunt.com/product/general-chemistry-i-scc201-lab-manual).

### Software

[Sapling Learning](http://www.saplinglearning.com/).com online will be used for homework assignments and tutoring. Subscription to Sapling Learning is $ 42. (www.saplinglearning.com)

### Safety Goggles

All students are required to bring safety glasses to every laboratory session.

They are available in the Bookstore. **You will not be permitted to remain in the lab and perform experiments without them.**

### Scientific Calculator

All students are required to have their own scientific calculator.

**Borrowing calculators or using cellphones/IPads etc., will NOT be allowed during quizzes and exams and using them will be treated as intent to cheat.**

## Homework Assignments

ALL homework assignments will be done online through www.saplinglearning.com.

***NO WRITTEN HOMEWORK ASSIGNMENTS WILL BE ACCEPTED.***

Each student is therefore required to purchase a subscription at a cost of $42.

To register for the site follow the instructions below:

1. Go to [Sapling Learning](http://saplinglearning.com) (http://saplinglearning.com)
2. Login or create a login
3. If you already have a Sapling Learning account, log in then skip to step 3.
4. If you have Facebook account, you can use it to quickly create a Sapling Learning account. Select the blue button with the Facebook symbol on it (just to the left of the username field). The form will auto-fill with information from your Facebook account (you may need to log into Facebook in the popup window first). Choose a password and time zone, accept the site policy agreement, and click "Create my new account". You can then skip to step 3.
5. Otherwise, select "create account”. Supply the requested information and click "Create my new account". Check your email (and spam filter) for a message from Sapling Learning and click on the link provided in that email.
6. Find your course in the list (you may need to expand the subject and term categories) and click the link.
7. Select a payment option and follow the remaining instructions.

Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments. During sign up – and throughout the term - i**f you have any technical problems or grading issues,** email support@saplinglearning.comabout the issue. The Sapling support team is almost always more able (and faster) to resolve issues than your instructor.

## Grading for Course Requirements

### Grading Scheme

Course assignments and activities will total 1000 points. Student performance will be evaluated as follows:

| **Assignments and Activities** | **Points** | **Percent (%) of Final Grade** |
| --- | --- | --- |
| 3 Exams. 100 points each | 300 | 30% |
| Laboratory reports | 250  | 25% |
| 10 Homework Assignments. 10 points each  | 100  | 10% |
| 10 Pre-lab Quizzes. 5 points each. | 50  | 5% |
| Research paper | 50  | 5% |
| Final lab exam | 50 | 5% |
| Departmental cumulative Final Exam | 200  | 20% |
| **Total assignments and activities** | **1000**  | **100%**  |

Grading Letter Grades

A minimum of 600 points (60% of 1000) is required in order to receive a passing grade for the course. Per college standards, letter grades for the entire course will be assigned as follows:

| **Letter Grade** | **Percent (%)** |
| --- | --- |
| A | 93 to 100% |
| A- | 90 to 92.9% |
| B+ | 87 to 89.9% |
| B | 84 to 86.9% |
| B- | 80 to 83.9% |
| C+ | 77 to 79.9% |
| C | 73 to 76.9% |
| C- | 70 to 72.9% |
| D+ | 67 to 69.9% |
| D | 63 to 66.9% |
| D- | 60 to 62.9% |
| F | Less than 60%  |

##

## Course Policies

The [LAGCC Student Handbook](https://www.laguardia.edu/uploadedFiles/Main_Site/Content/Current_Students/Docs/Student-Handbook.pdf) contains general policies and services that may be relevant. For this course, you must know and follow these course policies:

### Academic Integrity Policy

Instructors of this course are required to implement CUNY and LAGCC’s policy regarding cheating on examinations and quizzes. Read the complete statement of the [academic integrity policy](https://www.laguardia.edu/uploadedFiles/Main_Site/Content/Faculty_Staff/Docs/academicintegritypolicy.pdf) or get a copy of the policy at the student counseling services. (https://www.laguardia.edu/uploadedFiles/Main\_Site/Content/Faculty\_Staff/Docs/academicintegritypolicy.pdf)

### Attendance and Tardiness Policy

Attendance at all class sessions, lecture and laboratory, is essential for proper understanding and mastery of the course material. Attendance in class is a requirement and will be considered in the evaluation of student performance. Instructors are required to keep an official record of student attendance.

**The maximum number of unexcused absences is limited to 15% of the number of class hours, or about 4 lectures.** **Note:** Absences are counted from the first day of class even if they are a result of late registration or change of program.

### Missed Assignment and Make-Up Policy

There are **no scheduled make-up exams**. All make-ups are solely at the discretion of the instructor. A student who has missed an exam should consult the instructor on the matter. Arrangements to take a missed exam must be made beforethe exam papers have been returned to the class.

### Disabilities

Every attempt will be made to accommodate any student with disabilities. If you have a documented or undocumented disability please see the instructor after class as soon as possible to discuss necessary accommodations and/or contact the [Office for Students with Disabilities](https://www.laguardia.edu/osd/) at (718) 482-5279 or go to room M-102

### Cell Phone Policy

The use of cell phones, smart phones, or other mobile communication devices is disruptive, and is therefore prohibited during class. Except in emergencies, those using such devices must leave the classroom for the remainder of the class period.

## Links to CUNY and LAGCC Sites and Resources

* [BlackBoard](https://bbhosted.cuny.edu/webapps/blackboard/execute/modulepage/view?course_id=_1626661_1&cmp_tab_id=_1651652_1&mode=view)
* [CUNYFirst](https://home.cunyfirst.cuny.edu/psp/cnyepprd/EMPLOYEE/EMPL/h/?tab=DEFAULT)
* [LAGCC Natural Sciences Department](https://www.laguardia.edu/ns/)
* [LAGCC library](https://library.laguardia.edu/)
* [Academic Help/Tutoring](https://www.laguardia.edu/Tutoring/)
* [Academic Peer Instruction](https://www.laguardia.edu/API/)
* [STEM Study Guide](https://www.laguardia.edu/uploadedFiles/Main_Site/Content/Academics/Departments/Natural_Sciences/docs/STEM_GUIDE_June%20_update_Final.pdf)
* [LAGCC ePortoflio](https://apps.laguardia.edu/eportfoliosso/)
* [Office of Assistive Technology](https://www.laguardia.edu/osd/)
* [Emergency funds](https://www.laguardia.edu/emergency-funds/)
* [MyLaGuardia](https://mail.lagcc.cuny.edu/viplogin/Default.aspx) for Students

## SCC201 Section Schedule and Instructors for Spring 2020

| SCC 201 section number | Day | Start Time | End Time | Instructor |
| --- | --- | --- | --- | --- |
| 142A | Thurs | 10:30 | 11:30  | M. Hossain |
| 142A | Tues | 10:30 | 12:45  | M. Hossain |
| 142B | Wed | 15:25 | 18:45 | A. Romu |
| 143A | Thu | 11:45  | 12:45  | M. Tsai |
| 143A | Tue | 10:30  | 12:45  | M. Tsai |
| 143B | Thu | 8:00  | 11:30  | M. Tsai |
| 144A | Thu | 11:45  | 12:45  | M. Tsai |
| 144A | Tue | 10:30 | 12:45 | M. Tsai |
| 144B | Tue | 13:00  | 16:25 | M. Tsai |
| 145A | Thu | 10:30  | 11:30 | M. Hossain |
| 145A | Tue | 10:30  | 12:45  | M. Hossain |
| 145B | Fri | 8:00  | 11:30  | S. Adl |
| 146A | Thu | 13:00  | 14:00  | M. Kowalczyk |
| 146A | Tue | 13:00  | 15:15  | M. Kowalczyk |
| 146B | Wed | 11:45 | 15:15  | M. Kowalczyk |
| 147A | Fri | 13:00  | 14:00  | M. Hossain |
| 147A | Wed | 13:00  | 15:15  | M. Hossain |
| 147B | Fri | 14:15 | 17:35 | M. Goya |
| 183A | Mon | 10:30 | 11:30 | S. Singh (Honours) |
| 183A | Tue | 9:15 | 11:30 | S. Singh (Honours) |
| 183B | Wed | 8:00 | 11:30 | S. Singh (Honours) |
| 629A | M/F | 18:00 | 19:30  | MA Dayao |
| 629B | W | 18:55  | 22:15  | H. Sultana |
| 630A | M | 17:45  | 18:45  | M. Hossain |
| 630A | Wed | 17:45  | 19:55 | M. Hossain |
| 630B | Mon | 18:55 | 22:15  | A. Jones |
| 631A | Sat | 11:45  | 12:45  | J. Chavez |
| 631A | Thu | 17:45  | 19:55  | J. Chavez |
| 631B | Sat | 8:00  | 11:30  | J. Chavez |
| 184A | Fri | 8:00 | 10:15 | G. Uddin |
| 184A | Mon | 11:45 | 12:45 | G. Uddin |
| 184B | Mon | 8:00 | 11:30 | G. Uddin |
| 641A | Sat | 8:00  | 11:30  | S. Shakya |
| 641B | Sat | 13:00  | 16:25  | S. Shakya |
| PR 9A | Tue | 11:45 | 12:45 | K Mark |
| PR 9A | Thu | 14:15 | 16:25 | K Mark |
| PR 9B | Tue | 16:35 | 19:55 | K Mark |

## Academic Calendar Important Dates

| **Date** | **Notes from the college’s academic calendar** |
| --- | --- |
| September 10 | First Day of Weekday Classes: Fall session I |
| September 14 | First Day of Saturday Classes- Fall 1 Session I |
| September 17 | No Classes  |
| September 19 | Course Withdrawal Drop Period Begins.  |
| September 21 | Last Day to drop for 50% Tuition Refund |
| September 26 | Last Day to Drop for 25% Tuition Refund/Course Withdrawal Drop “WD” Period ends  |
| September 27 | Withdrawal Period Begins-A grade of “W” will be Assigned to students who Officially Drop a Course |
| September 30 and 31 | No classes scheduled |
| October 8 and 9  | No classes scheduled |
| October 14 | College closed |
| October 16 | Irregular Day – Classes follow Monday schedule |
| November 10 | Last Day to Officially Withdraw from the Course |
| November 28 to December 1 | College Closed |
| December 7 | Last Day of Saturday Classes |
| December11 | Last Day of Weekday Classes |
| December 12 | Reading Day |

## Tentative Lecture and Exam Outline by Week

**Note**: Homework assignments will be due after the completion of each chapter. Individual instructors will set the due dates in Sapling.

### Week 1

Course orientation

Chapter 1 (Matter and Measurement)

### Week 2

Chapter 2.1 to 2.6 (Atoms, Molecules, and Ions)

### Week 3

Chapter 2.7 to 2.9 (Atoms, Molecules, and Ions)

Chapter 3.1 to 3.4 (Stoichiometry: Calculations with Chemical Formulas)

### Week 4

Chapter 3.5 to 3.7 (Stoichiometry: Calculations with Chemical Formulas)

Chapter 4.1 to 4.2 (Aqueous Reactions and Solution Stoichiometry)

### Week 5

Chapter 4.3 to 4.6 (Aqueous Reactions and Solution Stoichiometry)

#### ****EXAM #1 (covering Chapters 1, 2, and 3)****

### Week 6

Chapter 5 (Thermochemistry)

### Week 7

Chapter 6 (Electronic Structure of Atoms)

#### ****EXAM #2 (covering Chapters 4 and 5)****

### Week 8

Chapter 7.1 to 7.5 (Periodic Properties of the Elements),

Chapter 8.1 to 8.3 (Basic Concepts of Chemical Bonding)

### Week 9

Chapter 8.4 to 8.8 (Basic Concepts of Chemical Bonding)

### Week 10

Chapter 9.1 to 9.3 (Molecular Geometry and Bonding Theories)

### Week 11

Chapter 9.4 to 9.7 (Molecular Geometry and Bonding Theories)

Chapter 10.1 to 10.2 (Gases)

#### ****EXAM #3 (covering Chapters 6, 7, 8, and 9)****

### Week 12

Chapter 10.3 to 10.7 (Gases)

### Week 13

#### ****CUMULATIVE FINAL EXAM****

## Safety Information and Lab Policies

1. Please be aware where safety equipment is located (Safety Shower, Eye Wash Station, Fire Extinguishers, Fire Blankets, First Aid Kits and Emergency Exits). In case of emergency, instructors should direct students to the proper safety equipment and then call the laboratory technician.
2. **Students are required to wear safety glasses at all times** for laboratory work and to observe all safety rules.
3. **NO FOOD OR DRINK** (including bottled water) is allowed in the lab at any time.
4. **Students are required to wear closed, non-fabric shoes to adequately protect their feet – NO SANDALS, SLIPPERS, OPEN-TOED OR OPEN-HEELED SHOES ARE ALLOWED.**
5. **Students will not be permitted to do the lab if they arrive more than 30 minutes late**. At the instructor’s discretion, they may be permitted to do a makeup (see paragraph number 8)
6. The student’s data sheet should be signed by the instructor before leaving the lab.All entries into data sheets must be **in INK with NO WHITE-OUTS (liquid paper).** The **original** signed data sheet **must** be submitted with the lab report.
7. Formal, written lab reports are required for 5 labs and are worth 35 points each. There are 5 informal labs worth 15 points each. Please the Laboratory Manual for guidelines for preparing the reports.
8. Students are permitted to make up missed labs with another class at the instructor’s discretion. A student wishing to make up a missed lab must obtain a signed permission form from his or her original instructor to take to the class where the lab will be made up. The form is available from the lab technician. At the end of the makeup lab, this form must be signed by the instructor and returned by the student to the original instructor as proof that the lab was completed. Please note that the lab can only be made up if there is another class doing the same lab ***and*** there is space available for the student in that class.
9. A **pre-lab quiz** will be given at the beginning of each lab session – you should read through the experiment and do the pre-lab exercises in preparation for the quiz. [Watch the techniques](https://www.youtube.com/watch?v=mk4oa0fUPRg) used in the SCC 201 labs on YouTube (6 out of the 10 experiments) (https://www.youtube.com/watch?v=mk4oa0fUPRg).

## Laboratory Experiment Schedule and Points

| **Week**  | **Lab Experiment**  | **Lab Manual Pages** | **Points** |
| --- | --- | --- | --- |
| Week 1 | Orientation: Safety Procedures; Guidelines for Laboratory Reports; Introduction to Basic Laboratory Techniques (Note: Bring a calculator!) | Pages vii to xi and 9 to 14 | No point |
| Week 2 | Measurements and Significant Figures (Intro+Data+Calculations)  | Page 15 | 15 points |
| Week 3 | Qualitative Analysis of Ions (Procedure and Data)  | Page 23 | 15 points |
| Week 4 | Classification of Chemical Reactions (Data and Discussion)  | Page 29 | 15 points |
| Week 5 | Determining the Empirical Formula of a Hydrate (Formal)  | Page 35 | 35 points |
| Week 6 | Titration of a Newtown Creek Environmental Water Sample to Determine the Amount of Chloride Ions (Formal)  | **Print from Blackboard** | **35** points |
| Week 7 | Calorimetry- Heat of Neutralization and Hess’s Law (Formal) | **Print from Blackboard** | **35** points |
| Week 8 | **Computer Lab- Molecular Modelling/ Lewis Structure**  | **Print from Blackboard** | **15** points |
| Week 9 | **Computer Lab- Bond Length/ VSEPR**  | **Print from Blackboard** | **15** points |
| Week 10 | **Computer Lab- Molecular Energies**  | **Print from Blackboard** | **35** points |
| Week 11 | Determination of the Gas Law Constant (Formal)  | Page 67 | 35 points |
| Week 12 | **Lab Final Exam** |  None | 50 points |