



*Chemistry Department
Online Syllabus
Last updated March 16, 2021*

Important Note: Every effort will be made to avoid changing the course schedule, but the possibility exists that unforeseen events will make syllabus changes necessary. It is your responsibility to check Blackboard for corrections or updates to the syllabus. Any changes will be clearly noted in course announcements or through Stony Brook email.

Part 1: Course Information

Course title: General Chemistry I Laboratory

Course catalog # and section: CHE 133.30

Credit hours: 1

General education designation(s) (SBC) (*undergraduate only*): N/A

Instructor name: Susan Oatis

Instructor's Stony Brook email, phone number, and time zone: Susan.Oatis@stonybrook.edu, (631) 632-1571, Eastern Time Zone

Virtual Office hours: Monday, 2:00 – 3:00 pm

Course Description: Designed to familiarize students with (1) some chemical and physical properties of substances, (2) techniques of quantitative chemistry, and (3) scientific methodology. Twelve hours of laboratory or related activity per week. CHE 133 and CHE 134 may not be taken for credit in addition to CHE 154. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Required Course Textbook and Materials:

1. Composition notebook
2. Periodic Wonders (PW) Kit: CHE 131
3. Student supplied materials – list is provided on Blackboard under Documents



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To order your Chemistry Kit, follow the directions given below:

Please visit <https://periodicwonders.org/> to purchase your custom kit for CHE 133. If you have any difficulties with the purchasing process please contact customer support at help@periodicwonders.org. International students should email (help@periodicwonders.org) Periodic Wonders directly to place their order. Please use your SBU email when ordering. As long as you enter your SB ID and email, Periodic Wonders will handle the rest.

Purchasing a kit is not optional. As per the University Schedule of Classes, "at home kits are required." You will NOT be charged a lab fee. SBU has waived the normal lab fee associated with CHE 133 to help offset the cost of the kits.

Philosophy and Goals:

A scientist's job is to answer questions. They start with a hypothesis they would like to test. First, they need to design an experiment to gather data that either supports or disproves the question they are trying to answer. In the lab, they perform an experiment, gather data and determine whether their data is valid. Once they feel confident in their data, they need to interpret what the data means. Sometimes the data doesn't answer the question, so they go back to the drawing board and redesign their experiment. This cycle continues until the data proves or disproves the hypothesis. Once they have data that supports their hypothesis, they need to communicate these results through publications and conference seminars.

The key here is that the scientist doesn't know the answer before hand. The scientist needs to rely on their assessment of the quality and validity of their data. You will find that the concepts illustrated in the laboratory exercises will often precede the lecture.

The purpose of this course is to allow you to develop the skills chemists use in the scientific method. Some of the exercises in this laboratory course will help you to develop general laboratory skills. These experiments will be presented with specific instructions. When you have obtained precise and accurate results this will build your confidence in the reliability of your technical skills. By comparing your data with class data with error analysis, you will be able to assess the quality of your data. Quality data is essential to be able to determine the relationship between the variables you are measuring. You will be able to develop your communication skills through a poster presentation of your final project.

Course Delivery Mode and Structure:

This online course is delivered through the Blackboard learning management system (LMS). Students must be mindful of all course expectations, deliverables and due dates, especially because the online portion of the course requires significant time management. All assignments and course interactions will utilize internet technologies. See "Technical Requirements" section for more information. In Blackboard, you will access online lessons, course materials, and resources. EACH WEEK HAS SEVERAL LEARNING MODULES; with deadlines on Thursdays at 5pm and Mondays at 5 pm, EST. Some variations will occur. **The Learning Modules will provide detailed directions for each assignment.**

How We Will Communicate:

Course-related questions should be posted in the General Questions Forum in the course Discussion board. For personal/private issues, email Professor Oatis directly. Each section has a dedicated teaching assistant (TA) who can help with most questions. If you use Blackboard's **email tool** from the course site, it will automatically include your full name, course name and section when you send me an email. **Please allow between 24-48 hours for an email reply.** Your Stony Brook University email must be used for all University-related communications. You must have an active Stony Brook University email account and access to the Internet. All instructor correspondence will be sent to your SBU email account. **Plan on checking your SBU email account regularly for course-related messages.** To log in to Stony Brook Google Mail, go to <http://www.stonybrook.edu/mycloud> and sign in with your NetID and password.

Regular announcements will be sent from Blackboard. These will be posted in the course site and may or may not be sent by email.

Regular communication is essential in online classes. Logging in once a day, checking the discussion board and participating with your colleagues ensures that you are able to remain an active member of the class and earn full points for participation.

Technical Requirements:

This course uses Blackboard for the facilitation of communications between faculty and students, submission of assignments, and posting of grades and feedback. The Blackboard course site can be accessed at <https://blackboard.stonybrook.edu>

If you are unsure of your NetID, visit <https://it.stonybrook.edu/help/kb/finding-your-netid-and-password> for more information. You are responsible for having a reliable computer and Internet connection throughout the term. **Caution!** You will be at a disadvantage if you attempt to complete all coursework on a smart phone or tablet. It may not be possible to submit the files required for your homework assignments.

Students should be able to use email, a word processor, spreadsheet program, and presentation software to complete this course successfully.

The following list details a minimum recommended computer set-up and the software packages you will need to have access to, and be able to use:

- PC with Windows 10 or higher (we recommend a 3-year Warranty)
- Macintosh with OS 10.11 or higher (we recommend a 3-year Warranty)
- Intel Core i5 or higher
- 250 GB Hard Drive
- 8 GB RAM
- Latest version of Chrome or Firefox; Mac users may use Chrome or Firefox. (A complete list of supported browsers and operating systems can be found on the My Institution page when you log in to Blackboard.)

- High speed internet connection
- Word processing software (Microsoft Word, Google Docs, etc.)
- Headphones/earbuds and a microphone
- Webcam (recommended)
- Printer (optional)
- Ability to download and install free software applications and plug-ins (note: you must have administrator access to install applications and plug-ins).

Technical Assistance:

If you need technical assistance at any time during the course or to report a problem with Blackboard you can:

- Phone: 631-632-9800 (client support, Wi-Fi, software and hardware)
- Submit a help request ticket: <https://it.stonybrook.edu/services/itsm>
- If you are on campus, visit the Walk-Up Tech Support Station in the Educational Communications Center (ECC) building.

Part 2: Course Learning Objectives and Assessments

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

1. Demonstrate how to conduct a scientific experiment safely. Decide what PPE is required for the chemicals used. Understand how to read a MSDS sheet to assess the hazards associated with a chemical. Demonstrate knowledge of how to safely handle the chemicals used. Demonstrate how to carry out an experimental procedure.
2. Demonstrate the ability to record data and observations directly into laboratory notebook.
3. Demonstrate the ability to use the following equipment: digital balance, volumetric glassware: pipets and flasks.
4. Demonstrate the ability execute the following basic experimental techniques with less than 10% relative error: Preparing solutions of known concentration and titrimetric analysis.
5. Demonstrate the ability to record data with the appropriate number of significant figures. Demonstrate the ability to report derived results to the appropriate number of significant figures.
6. Demonstrate the ability to calculate the average and percent deviation of multiple trials. Demonstrate the ability to make repetitive measurements with a percent deviation less than 5%.
7. If there is > than 5% difference in multiple trials of the same measurement, evaluate and provide three the possible causes for the outlier data.

8. Compare your data to your lab partners' data. If there is more than a 5% difference between the data, discuss with your lab partners, three possible sources of error for the outlier data.
9. In the discussion section of your lab report or poster presentation, discuss the accuracy and precision of your data. Evaluate, when appropriate how one variable affects the measurement of another variable in your experiment.
10. Prepare a poster presentation (VoiceThread), using the given guidelines. Present results and discussion of your experiment.

How to Succeed in this Course:

- Being an online asynchronous course, it is very important that you stay on schedule. We will be completing about 3 assignments per week.
- All pre-lab questions, experimental write-ups and timed assessment quizzes will be posted to Blackboard.
- At the completion of each experiment, you will need to submit a photo of your notebook pages containing the data and observations obtained during the experiment. You will also discuss with your assigned lab partners, through a group discussion board on Blackboard (Wiki entry), your results, any difficulties you had and what improvements could be made.
- Group work/participation is essential. Wiki entries, videos and poster presentations all focus on collaborative work.
- How much time should students devote to an online course? Time on task information, see NY State Education Department: <http://www.nysed.gov/college-university-evaluation/distance-education-program-policies>

Part 3: Course Schedule

*The entire course will be offered online ***subject to changes****

Week or Learning Module	Topic and Student Learning Outcomes	Readings, videos, podcasts, etc.	Activities, assignments, assessments, etc.	Due Dates and Points
<i>May 24</i>	Lesson: Getting Started	Blackboard	Answer questions, upload photos 20 pts	May 27 by 5 pm
<i>May 25</i>	Lesson: Laboratory Safety	Blackboard	Answer questions, Safety agreement form 30 pts	May 27 by 5 pm

<i>May 27</i>	MSDS, Introductions	VoiceThread	MSDS video 15 pts Introduction video 15 pts	May 31 by 5 pm
<i>June 1</i>	Precision and Accuracy Experiment 1: Laboratory Technique and Measurements	Blackboard Handout	Reading Prelab investigation (10 pts) Experiment and Assessment Quiz (20 pts) Notebook 15 pts Wiki entry 5 pts	June 3 by 5 pm
<i>June 3</i>	Designing a Project Sampling Techniques	Blackboard Handout Handout	Reading Reading Group Project form (10 pts) Group Contract Form (10 pts)	June 7 by 5 pm
<i>June 7</i>	Experiment 2: Dissolved Oxygen	Blackboard	Prelab investigation (10 pts) Experiment and Assessment Quiz (20 pts) Notebook 15 pts Wiki entry 5 pts	June 10 by 5 pm
<i>June 8</i>	Experiment 3: Water Hardness	Blackboard	Prelab investigation (10 pts) Experiment and Assessment Quiz (20 pts) Notebook 15 pts Wiki entry 5 pts Class Discussion 10 pts	June 10 by 5 pm
<i>June 10</i>	Excel	Blackboard	Assignment 10 pts	June 14 by 5 pm
<i>June 14</i>	Experiment 4: Analysis of Phosphate	Blackboard	Prelab investigation (10 pts) Experiment and Assessment Quiz (20 pts) Notebook 15 pts Wiki entry 5 pts	June 17 by 5 pm
<i>June 15</i>	Experiment 5: Acid-Bases Poster Presentations	Blackboard Handout	Prelab investigation (10 pts) Experiment and Assessment Quiz (20 pts) Notebook 15 pts Wiki entry 5 pts Class Discussion 10 pts Draft poster presentations	June 17 by 5 pm June 21 by 5 pm

<i>June 17</i>	Experiment 6: Water, pH and Buffers	Blackboard	Prelab investigation (10 pts) Experiment and Assessment Quiz (20 pts) Notebook 15 pts Wiki entry 5 pts	June 21 by 5pm
<i>June 21</i>	Poster critiquing	Blackboard Discussion Board	Assignment 10 pts	June 24 by 5 pm
<i>June 28</i>	Poster presentation	VoiceThread Blackboard	Poster 50 pts Self evaluation 5 pts Peer evaluation – 5 pts	July 1 by 5pm

Part 4: Grading, Attendance, and Late Work Policies

Assessment and Grading:

Experiment Modules: There are 6 experimental modules. Each module will contain pre-lab questions and a timed post lab quiz (both of which you answer on Blackboard). Pre-lab questions are based on understanding the content in the handout for the experiment (experimental write-up). Pre-lab questions are worth 10 points total per lab. The six timed post lab assessment quizzes are worth 20 points each. You will have 30 minutes to complete the quiz. It is open notes and assesses your understanding of the experiment performed.

Group discussion: Entry for each member of the group upon completion of each of the six experiments (Wiki). Each student will make six Wiki entries (one per experiment).

Class discussion: Discussion of the results obtained from the Water Hardness (June 8), Acid Base Lab (June 15) experiments and poster critiquing assignment for the poster presentation (June 21).

Notebook: Submission of photos of notebook pages illustrating the data and observations recorded for each experiment. Experimental data and derived results recorded in the appropriate number of significant figures. Quality of results and discussion will be evaluated. Discussion questions listed in the experimental write-up are answered in the notebook. See page 9 for required notebook format.

Videos: Introduction (individual), MSDS (individual)

Poster Presentation: Poster (group) submitted as a VoiceThread, self-evaluation, peer evaluation.

Viewing Grades on Blackboard: Points and feedback for graded activities will be posted to the My Grades tab in the Tools area of Blackboard. *Discussion boards, VoiceThreads, Wikis will be*

graded within 48 hours of closing each week. Submitted experiments will be graded within 1 week of being submitted.

In this course, you will be assessed on the following:

Activity/Assignment	Points	Due Date
Discussion boards (9)	60 (Wiki 30, class discussion 20, poster critiquing 10)	6/3, 6/10, 6/17, 6/21, 6/24
VoiceThreads: MSDS and Introduction	30	5/31
Lessons	50 (Getting Started 20, Safety 30)	5/27
Experiments	180 (30 pts /expt: 10 prelab, 20 post lab)	6/3, 6/10, 6/17, 6/21
Notebook	90 (15 pts/expt)	6/3, 6/10, 6/17, 6/21
Poster presentation + evaluation	90 (Group project 10, contract 10, poster 50, self/peer assessment 20)	7/1
Total	500	

Letter Grades:

Final grades assigned for this course will be based on the percentage of total points earned:

- [Undergraduate Grading System](#)
- [Graduate Grading System](#)

Attendance Policy: *Timely and effective participation is expected. If you are in need of assistance, please contact me immediately. Waiting until the end of the term is not a solution.*

Late Work Policy: *Late work will only be accepted in cases of medical or family emergency. Proper documentation must be sent to the Dean of Student Affairs for approval. You must email your TA (when possible, before the due date) to inform them that you have an emergency. Please submit assignments ahead of the due date to avoid last minute technical (i.e., connectivity) issues.*

Laboratory Notebook Format:

You will be required to obtain a laboratory notebook and number its pages.

Before each experiment, you are required to read the lab experiment and understand the concept behind it. It is best to generate tables to enter your data within prior to starting the experiment. Data tables are required and can be copied from the experimental write-up. All of your data will be entered directly into your lab notebook in pen. Follow the format presented below:

Experiment title:

CHE 133 and Lab Section Number:

Date:

Name:

TA:

Purpose: In one or two sentences describe the main objective of the laboratory experiment (what questions you will attempt to answer and how).

Results: Record any qualitative observations: evolution of heat, formation of a gas, precipitate, color change, etc. You should write in table format (copy the tables from the experimental write-up) to organize quantitative data as it is being recorded. Please pay attention to your significant figures and units!

Calculations: Perform any required calculations, such as difference in volume or percent yield, in this section. Show your work! Take a look at the specific information in the lab you are performing to see what should be included in this section.

Discussion (Data Analysis): Analyze the quality of the data and comment on your results, as necessary. Analyze quantitatively and qualitatively!

Discussion Board Grading Rubric

Interpretation Points	Quality of posts	Frequency	Mechanics
Exemplary 5, full points or higher	The comment is accurate, relevant, properly attributed and evidence-based as well as original and well written. Adds substantial learner presence to the course and stimulates additional thought about the issue under discussion. Collegial and friendly tone.	Participates steadily throughout the week (or module) and responds to instructor and/or peers on or before deadline.	Free of spelling and grammatical errors.
Accomplished 3 to 4	The comment lacks at least one of the above qualities, but is above average in quality. Makes a significant contribution to our understanding of the issue being discussed.		One or two minor errors.
Developing 2 to 3	The comment lacks two or three of the required qualities. Comments which are based solely upon personal opinion or	Few posts. Posts are bunched into one or two	

	personal experience often fall within this category.	days at the end of the week.	
Needs work 1 to 2	The comment presents little or no new information. However, may provide social presence and contribute to a collegial atmosphere.	Few posts. Deadlines are not met.	Multiple spelling and grammar errors or inappropriate.

Poster Presentation (VoiceThread) Grading Rubric*

Category	Points
Proper number of slides	2
Title slide	2
Abstract	6
Introduction	6
Material and Methods	6
Results and Discussion	16
Conclusions	6
References	2
Formatting	4

*50 points total. A more detailed rubric will be posted later in the semester

Part 5: University and Course Policies

University Policies:

Student Accessibility Support Center Statement:

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, 128 ECC Building, (631) 632-6748, or at sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and the Student Accessibility Support Center. For procedures and information go to the following website: <https://ehs.stonybrook.edu/programs/fire-safety/emergency-evacuation/evacuation-guide-people-physical-disabilities> and search Fire Safety and Evacuation and Disabilities.

Academic Integrity Statement:

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-

specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

Important Note: Any form of academic dishonesty, including cheating and plagiarism, will be reported to the Academic Judiciary.

Critical Incident Management:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

Course Policies:

Understand When You May Drop This Course:

It is the student's responsibility to understand when they need to consider withdrawing from a course. Refer to the Stony Brook Academic Schedule for dates and deadlines for registration: http://www.stonybrook.edu/commcms/registrar/calendars/academic_calendars.

- [Undergraduate Course Load and Course Withdrawal Policy](#)
- [Graduate Course Changes Policy](#)

Incomplete Policy:

Under emergency/special circumstances, students may petition for an incomplete grade. Circumstances must be documented and significant enough to merit an incomplete. If you need to request an incomplete for this course, contact me for approval as far in advance as possible.

Course Materials and Copyright Statement:

Course material accessed from Blackboard, SB Connect, SB Capture or a Stony Brook Course website is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the instructor and/or the copyright holder. Duplication of materials protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as well as a violation of Stony Brook's Academic Integrity.

Online Communication Guidelines and Learning Resources:

Maintain professional conduct both in the classroom and online. The classroom is a professional environment where academic debate and learning take place. I will make every effort to make this environment safe for you to share your opinions, ideas, and beliefs. In return, you are expected to respect the opinions, ideas, and beliefs of other students—both in

the face-to-face classroom and online communication. Students have the right and privilege to learn in the class, free from harassment and disruption. The course follows the standards set in the Student Code of Conduct, and students are subject to disciplinary action for violation of that code. If your behavior does not follow the course etiquette standards stated below, the grade you receive for a posting may suffer. I reserve the right to remove any discussion messages that display inappropriate language or content.

Online Etiquette:

- Offensive language or rudeness will not be tolerated. Discuss ideas, not the person.
- Avoid cluttering your messages with excessive emphasis (stars, arrows, exclamations).
- If you are responding to a message, include the relevant part of the original message in your reply, or refer to the original post to avoid confusion;
- Be specific and clear, especially when asking questions.
- Use standard punctuation and capitalization. Using all UPPERCASE characters gives the appearance of shouting and makes the message less legible;
- Remember that not all readers have English as their native language, so make allowances for possible misunderstandings and unintended discourtesies.

Online Classes Require Better Communication:

It is important to remember that we will not have the non-verbal cues that occur in a face-to-face classroom. I cannot see the confused, frustrated, or unhappy expressions on your face if you encounter problems. You **MUST** communicate with me so that I can help. To make the experience go smoothly, remember that you're responsible for initiating more contact, and being direct, persistent, and vocal when you don't understand something.

My Role as the Instructor:

As the instructor, I will serve as a "guide" in our online classroom. While I will not respond to every post, I will read what is posted, and reply when necessary. Expect instructor posts in the following situations:

- To assist each of you when it comes to making connections between discussion, lectures, and textbook material.
- To fill in important things that may have been missed.
- To re-direct discussion when it gets "out of hand."
- To point out key points or to identify valuable posts.

Part 6: Student Resources

Academic and Major Advising (*undergraduate only*): Have questions about choosing the right course? Contact an advisor today. Phone and emails vary-please see website for additional contact information; website: <https://www.stonybrook.edu/for-students/academic-advising/>

Academic Success and Tutoring Center (*undergraduate only*):

<https://www.stonybrook.edu/tutoring/>

Amazon @ Stony Brook: Order your books before classes begin. Phone: 631-632-9828; email:

Bookstore_Liaison@stonybrook.edu; website: <http://www.stonybrook.edu/bookstore/>

Bursar: For help with billing and payment. Phone: 631-632-9316; email:

bursar@stonybrook.edu; website: <http://www.stonybrook.edu/bursar/>

Career Center: The Career Center's mission is to support the academic mission of Stony Brook University by educating students about the career decision-making process, helping them plan and attain their career goals, and assisting with their smooth transition to the workplace or further education. Phone: 631-632-6810; email: sbucareercenter@stonybrook.edu; website:

<http://www.stonybrook.edu/career-center/>

Counseling and Psychological Services: CAPS staff are available by phone, day or night.

<http://studentaffairs.stonybrook.edu/caps/>

Ombuds Office: The Stony Brook University Ombuds Office provides an alternative channel for confidential, impartial, independent and informal dispute resolution services for the entire University community. We provide a safe place to voice your concerns and explore options for productive conflict management and resolution. The Ombuds Office is a source of confidential advice and information about University policies and procedures and helps individuals and groups address university-related conflicts and concerns. <http://www.stonybrook.edu/ombuds/>

Registrar: Having a registration issue? Let them know. Phone: 631-632-6175; email:

registrar_office@stonybrook.edu; <http://www.stonybrook.edu/registrar/>

SBU Libraries: access to and help in using databases, ebooks, and other sources for your research.

- Research Guides and Tutorials: <http://guides.library.stonybrook.edu/>
- Getting Help: <https://library.stonybrook.edu/research/ask-a-librarian/>

Student Accessibility Support Center: Students in need of special accommodations should contact SASC. Phone: 631-632-6748; email: sasc@stonybrook.edu;

<https://www.stonybrook.edu/sasc/>

Support for Online Learning: <https://www.stonybrook.edu/online/>

Writing Center: Students are able to schedule face-to-face and online appointments.

<https://www.stonybrook.edu/writingcenter/>