

**CHM 105: Introductory Chemistry Laboratory (Laboratory for Chemistry 103)
Spring Semester 2019**

Course Syllabus part A

Laboratory Director

Dr. Maria Donnelly

Email: madon@uri.edu

Office: Beaupre 117C

Office Hours: available via URI's Starfish Success Net

Laboratory Instructors

Sections 7 & 8:	Nicole Hagan	nprovensal@uri.edu
Sections 3 & 5:	Rui Qi	rui_qi@uri.edu
Sections 2 & 4:	Yiwen Zhao	yiwen_zhao@uri.edu
Sections 1 & 6:	Xianhao Zhou	xianhao_zhou@uri.edu

Required Laboratory Materials

- CHM 105 lab manual (available at the URI Bookstore)
- RAM account and ID card, for purchases at the CHM Stockroom (Room 180)
- Safety glasses/goggles & knee-length lab coat (can be purchased at the Stockroom*; safety glasses will also be sold in Beaupre 115 at the start of the semester)
- For some experiments, NITRILE gloves (can be purchased at the Stockroom*)
- A scientific calculator with log and exponent functions
- Lab Prep Lessons and Announcements at the CHM 105 Sakai website
 - Students must take responsibility for carefully studying all lab materials and following all study/safety instructions.

* Note that safety equipment can also be purchased off-campus but must be approved by the Stockroom Manager before being used in lab.

Important Spring 2019 Semester Deadlines:

- Wednesday 1/23: Classes start
- Tuesday 1/29: Open add period ends
- Tuesday 2/5: Permission Number add period ends
- **Thursday 2/14: Last day to drop without a W on your transcript**
- Monday 2/18: Presidents Day – classes DO meet
- **Wednesday 3/6: Last day to drop a course in ecampus** (after this date you would need paperwork signed by your Dean)
- Monday 3/11 – Friday 3/15: Spring Break
- Monday 3/19: Freshman midterm grades
- Tuesday 4/30: Last day of classes

CHM 105 Course Syllabus part B

Attendance Policy

CHM 105 is a laboratory course, which requires hands-on experimentation and direct observation of physical and chemical changes. For this reason, *students MUST be present to conduct each experiment*. Attendance is *required* at the day and time for which each student has registered. Under *NO* circumstances will students be permitted to attend a lab section other than the one for which they have officially registered (except for the Mandatory Safety Training in Week 1).

The course includes 11 laboratory experiments, and a 12th make-up experiment. As the course grade is based on completion of 10 experiments, each student is permitted *ONE absence without penalty*. Any student who has a second absence *MUST* complete the make-up experiment on one of the designated days in the last week of classes. A reservation at the Stockroom (Beaupre 180) is required to participate in a make-up lab session.

Students who do not complete 10 experiments can expect to receive a failing grade in the course. “Complete” means the student submitted the Pre-Lab Assignment, passed the Pre-Lab Quiz, worked the experiment, and submitted the Report Sheet.

Grading Policy

The course grade will be based on the following:

10 Pre-Lab Assignments (20 points each)	200 points
10 Pre-Lab Quizzes (30 points each)	300 points
10 Lab Performance Assessments (10 points each)	100 points
10 Report Sheets (60 points each)	600 points
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	1200 points

Note that for *each* lab experiment, students have the opportunity to earn a total of 120 points:

- 20 points for the Pre-Lab Assignment
- 30 points for the Pre-Lab Quiz
- 60 points for the Report Sheet
- 10 points for the Lab Performance Assessment

NO extra credit assignments will be given, and the standard grading scale will be in effect:

90%+ = A- / A; 80-89% = B- / B / B+; 70-79% = C- / C / C+; 60-69% = D / D+; <60% = F

Grades in CHM 105 are *earned* by demonstrating mastery/proficiency in the required skills; these skills include not only the chemistry laboratory techniques, but also problem-solving, critical thinking, and the ability to apply course concepts within relevant laboratory scenarios.

To be clear: Each student’s grade is determined by the *quality* of that student’s performance on the CHM 105 work items (described in detail below). The grade is *not* open to negotiation, and it is *not* dictated by what is needed to progress in the student’s chosen program of study. The grade must be *earned* by achieving *proficiency in* (and ideally – *mastery of*) the skills identified as essential to ongoing success in the student’s degree program.

The teaching assistant assigned to your section does all of the grading for the course. Contact your TA immediately if you have a problem with the grading of your work. If the problem does not get resolved through your TA, contact the course supervisor immediately. Check the Sakai site each week to make sure that the grades on Sakai match your graded work. **No changes in grades will be made if the problem is not addressed within ONE WEEK of receiving your graded material back from your TA.**

Do not compare the grading on your work to that of a student with a different TA. All teaching assistants grade slightly differently. At the end of the semester, the course director evaluates the grades of each TA and will assign a scale to each section, **if necessary**, to ensure that the overall letter grades of the teaching assistants are fair. Please note that there is no guarantee of a scale; scales will only be applied **when necessary** to ensure that overall letter grades are fair despite variations in grading.

Students should be aware that the CHM 103 lecture and CHM 105 lab are separate courses. The lab is intended to complement the lecture by illustrating many of the lecture concepts; however, the timing of these concepts *may not* be synchronized with the lecture presentation. The lab also includes some additional concepts that are *not* taught in lecture.

NOTE: For those CHM 105 students currently enrolled in the CHM 103 lecture course:

If you DROP the CHM 103 lecture course, you MUST ALSO DROP the CHM 105 lab.

It is recognized that some students enrolled in the CHM 105 lab may have completed the CHM 103 lecture in a previous semester or previous academic year. For this reason, each of the experiments in the lab manual is written as a complete lesson, and supplemental materials – including video tutorials – are available at the Sakai course site. Any student who does a thorough job studying the provided course materials, preparing for each experiment, practicing the required skills, and utilizing the Study Help Resources should be able to succeed in the course.

Incomplete Policy:

Incomplete grades cannot be assigned except in the case of a real emergency. Any grade of incomplete must be approved by the department chair and the dean. In order to receive an incomplete, a student's **coursework must have been passing** and the student **must have completed at least half of the coursework for the semester**. Incompletes should be made up within one year of the semester in which the grade of incomplete was assigned. **If an incomplete is not made up prior to the two year deadline established by the University, the "I" will be replaced with a grade calculated for the student based on the work completed and including zeroes for any work not completed.**

Laboratory Work Items:

1. Pre-Lab Assignments and Pre-Lab Quizzes

Each laboratory experiment includes both a Pre-Lab Assignment and Pre-Lab Quiz, so students can demonstrate that they have thoroughly prepared for their experimental work. Information about the Pre-Lab Assignments and Pre-Lab Quizzes is provided in the "*Remedies for Common Laboratory Ailments*" discussion presented as part of the introductory material in the CHM 105 lab manual. Students must take responsibility for reviewing these materials, contacting their lab instructor with any questions, and taking the necessary steps to prepare.

Any student who comes to lab and does NOT have the lab manual, the completed Pre-Lab Assignment, and the required personal protection items will NOT be permitted to conduct the experiment, and will receive a ZERO for that week's experiment.

Pre-Lab Quizzes will be given promptly at the start of each lab period, after attendance and drawer inventory. Students who arrive late (after the quiz has been completed) will receive a zero for that quiz.

2. Report Sheets

Report Sheets are due at the *NEXT lab meeting the student attends*, and they must be submitted at the *START* of that lab session.

An immediate late penalty of 10 points will be assessed for Report Sheets not submitted to the lab instructor at the START of the lab session. An additional 10 point late penalty is assessed EACH business day after the due date, so that Report Sheets which are a full week late are worth ZERO points.

As described in the "*Remedies*" document, the Report Sheets *MUST* be written in blue or black ink. Your lab instructor *MUST* look over your data/observations and sign your Lab Notebook pages before you leave the lab.

3. Lab Performance Assessment

During each experiment, the lab instructor will objectively assess each student's performance in the lab and assign 0 to 10 points for appropriate laboratory behavior and technique.

Lab performance points are AWARDED for: demonstrating familiarity with the experimental procedure, demonstrating proper experimental technique, keeping personal lab bench and communal areas clean, properly (and carefully) disposing of waste, interacting appropriately with fellow students and the teaching assistant, and adhering to safety regulations.

Performance points will be DEDUCTED for: unsafe experimental technique, leaving personal lab bench or communal work areas messy (chemical spills or equipment left out/in disarray), improper disposal of chemical waste, removal of safety glasses/goggles during an experiment, non-emergency cell phone use, or disruptive behavior during the laboratory period.

Chemistry Department Safety Policies:

- Students must be wearing their personal protection gear (lab coat and safety glasses or goggles) *BEFORE* they enter a teaching laboratory. (If required, nitrile gloves should be put on when students begin working on the experiment.)
- No student is permitted to enter a chemistry lab room unless they're wearing *BOTH* a lab coat and safety glasses or goggles. These items *MUST* be worn at all times while students are in a chemistry lab, and they can be removed only *AFTER* students have safely exited the lab room.
- Chemistry department personnel are *prohibited* from loaning safety glasses by State of Rhode Island health/hygiene regulations. Students who forget their safety glasses should *NOT* ask about loaner eyewear, and *must* purchase a replacement pair of safety glasses at full cost.

NOTHING is more important than the personal safety of the occupants of the laboratory. Any student who deliberately or carelessly disregards a written or oral safety instruction can be expelled from the laboratory and will receive a grade of zero for the experiment. A student who is expelled twice from the laboratory for safety violations will automatically receive a failing grade in the course.

Careless disregard of safety instruction includes (but is not limited to) the following:

1. Any student who improperly disposes of chemical waste (pours solutions into laboratory sinks, or places solid waste into a garbage can).
2. Any student who does *NOT* have the following personal protection items: safety glasses or goggles, lab coat (clothing which covers the arms to below the elbow and legs to below the knee), nitrile gloves (when required), shoes which fully enclose the foot (no open toe or heel) and socks.
3. Any student who has *NOT* completed the Pre-Lab Assignment or is *NOT* able to answer questions on the Pre-Lab Quiz (so as to demonstrate effective preparation for that day's experiment).
4. Any student who uses a cell phone in lab without prior permission, or for reasons other than a laboratory emergency.

Students who forget to bring their personal protection items will face a costly penalty:

Students with inappropriate footwear can purchase protective booties; however, a replacement pair of safety glasses or a lab coat must be purchased at full price. None of these items may be returned to the stockroom after they have been worn.

Laboratory Equipment Bills

Each lab student is responsible for the equipment provided in his/her assigned drawer. Because that drawer is shared with students in other sections, each student *must* carefully inventory the equipment in the drawer to verify that all items are present and in good working order. This inventory *must* be conducted at both the *beginning* and *end* of every lab period.

Students will be charged for any items that they break during their own lab section. Students will *also* be charged for any items reported missing or broken by the student who inventories that drawer at the beginning of the *next* lab section. ***Make sure to verify that all equipment has been returned to your drawer before leaving lab!***

Students *must* take responsibility for checking the Chemistry Stockroom website to determine whether they have an outstanding lab equipment bill. A link to the Stockroom website is available from the CHM 105 Sakai course site.

The deadline to pay lab equipment bills at the Chemistry Stockroom is at the close of business at the end of

Final Exam week. Any student who has an unpaid bill at the Chemistry Stockroom after that day will have a hold placed on their e-Campus account. This hold may prevent students from registering for classes, obtaining a transcript, or obtaining a diploma.

URI Policy on Academic Honesty

Although students are conducting each experiment in pairs, ***each student's Pre-Lab Assignment, Pre-Lab Quiz, and Lab Report Sheet MUST be completed on an individual basis.*** Students who submit work that is clearly the same as another student's work are in violation of the University's Policy on Academic Honesty. Those students will be held accountable as described in that Policy.

Academic dishonesty in *any* form is considered a serious offense, and disciplinary action will be taken immediately. The URI policy on academic honesty is detailed in the student handbook (available online), and is summarized below:

Students are expected to be honest in all academic work. A student's name on ANY written work, including assignments, lab reports, papers, or exams, shall be regarded as assurance that the work is the result of the student's own thought and study. Work should be stated in the student's own words, properly attributed to its source. Students have an obligation to know how to quote, paraphrase, summarize, or reference the work of others with integrity.

When students are authorized to work jointly, group effort MUST be indicated on the work submitted.

The following are examples of academic dishonesty:

- *Claiming disproportionate credit for work not done independently.*
- *Unauthorized use of another's work or preparing work for another student.*
- *Unauthorized possession or access to exams.*
- *Unauthorized communication during exams.*
- *Taking an exam for another student.*
- *Altering or attempting to alter grades.*
- *The use of notes or electronic devices (such as calculators, computers, or cell phones) to gain an unauthorized advantage during exams.*
- *Fabricating or falsifying facts, data, or references.*
- *Facilitating or aiding another's academic dishonesty.*

When there is an allegation of academic dishonesty, the instructor may:

- *Fail the student for the assignment, or recommend that the student fail the course.*

URI Chemistry Department plagiarism policies specific to CHM 105:

No section of your Pre-Lab Assignment, Pre-Lab Quiz, or Report Sheet can be identical (or nearly identical) to that of another student without attribution. If sections of Pre-Lab Assignments/Quizzes or Report Sheets are the same (or nearly the same) as another source (e.g., a student's paper, a section of the lab handout or lecture textbook, an explanation from a TA, information posted on the internet), it will be regarded as plagiarism.

The consequence of a first instance of plagiarism is a grade of zero on that section of the graded paper. If there is a repeat instance of plagiarism, the penalty is a grade of zero on the entire Pre-Lab Assignment, Pre-Lab Quiz, or Report Sheet.

A zero score due to a plagiarism incident will stand, and cannot be dropped as the lowest grade earned on a Lab Work Item.

Study Help Resources

- ***Chemistry Graduate Student Teaching Assistants in the Beaupre 115 Learning Center***

The Beaupre Learning Center is staffed by the Chemistry Department's Teaching Assistants and members of the AXE Chemistry fraternity, and provides a study area for preparing for lab and working problems. If you have a general question about lab, or need help with questions or calculations, you can see any one of the TAs; however, those TAs teaching the CHM 105, 102, or 114 Introductory or General Chemistry labs will be *most* familiar with the content of this course. A schedule of the Beaupre Learning Center office hours is available via a link in your CHM 105 Sakai site. The Beaupre Learning Center is recommended as the #1 study help resource for questions about chemistry lab courses, because the TAs actually teach the chemistry department lab courses.

- ***Chemistry Tutors at the Academic Enhancement Center (AEC)***

The AEC (www.uri.edu/aec) can help you keep up with class work and study course materials more effectively. Their staff of learning specialists and student tutors can help you identify a study approach, develop effective study strategies, understand course concepts, and practice skills productively. You can study at the AEC alone or in small groups. Please note that tutors at the AEC are not able to help with lab specific questions, but they can help you to understand the general material covered in CHM 105 and to improve your overall study skills. For the AEC schedule, please see their website (www.uri.edu/aec), call (401) 874-2367, or stop by the 4th floor in Roosevelt Hall.

- ***Assistance from Dr. Donnelly, during office hours or via email***

Dr. Donnelly's office hours schedule is available to you through URI's Starfish Success Net (link available on the course Sakai site). There are hours available for students to schedule individual appointments (15 minute limit per day), but students are also welcome to simply walk in during office hours or at a day/time when they can see Dr. Donnelly is available. Signing up for an office hour appointment gives the student priority for that block of time.

Study Help Advice

Whether you're seeking help from Dr. Donnelly, a Chemistry Teaching Assistant, or an AEC Tutor, you'll want to arrive at your help session *on time* and *fully prepared*, to make the discussion as productive and efficient as possible. This means you should bring all relevant study/reference materials with you to the session, including your CHM 105 lab manual, your data/observations from the lab experiment, your scientific calculator, and your *written* list of specific questions and/or goals for the help session.

Schedule of Experiments:

Dates	Day	Experiment
1/21- 1/25	M	No labs
	Tu	No labs
	W	check in
	Th	check in
	F	check in
1/28- 2/1	M	No labs
	Tu	check in / Lab 1: Measurements
	W	Lab 1: Measurements
	Th	Lab 1: Measurements
	F	Lab 1: Measurements
2/4- 2/8	M	No labs
	Tu	Lab 2: Density
	W	Lab 2: Density
	Th	Lab 2: Density
	F	Lab 2: Density
2/11- 2/15	M	No labs
	Tu	Lab 3: Separation of a Mixture
	W	Lab 3: Separation of a Mixture
	Th	Lab 3: Separation of a Mixture
	F	Lab 3: Separation of a Mixture
2/18- 2/22	M	No labs
	Tu	Lab 4: Chemical Formula
	W	Lab 4: Chemical Formula
	Th	Lab 4: Chemical Formula
	F	Lab 4: Chemical Formula
2/25- 3/1	M	No labs
	Tu	Lab 5: Structure, Geom., Polarity
	W	Lab 5: Structure, Geom., Polarity
	Th	Lab 5: Structure, Geom., Polarity
	F	Lab 5: Structure, Geom., Polarity
3/4- 3/8	M	No labs
	Tu	Lab 6: Six Bottle Study
	W	Lab 6: Six Bottle Study
	Th	Lab 6: Six Bottle Study
	F	Lab 6: Six Bottle Study

Dates	Day	Experiment
3/11- 3/15	M	Spring Break
	Tu	Spring Break
	W	Spring Break
	Th	Spring Break
	F	Spring Break
3/18- 3/22	M	No labs
	Tu	Lab 7: Stoichiometry
	W	Lab 7: Stoichiometry
	Th	Lab 7: Stoichiometry
	F	Lab 7: Stoichiometry
3/25- 3/29	M	No labs
	Tu	Lab 8: Ideal Gas Law
	W	Lab 8: Ideal Gas Law
	Th	Lab 8: Ideal Gas Law
	F	Lab 8: Ideal Gas Law
4/1- 4/5	M	No labs
	Tu	Lab 9: Solubility & Solutions
	W	Lab 9: Solubility & Solutions
	Th	Lab 9: Solubility & Solutions
	F	Lab 9: Solubility & Solutions
4/8- 4/12	M	No labs
	Tu	Lab 10: Reaction Rates
	W	Lab 10: Reaction Rates
	Th	Lab 10: Reaction Rates
	F	Lab 10: Reaction Rates
4/15- 4/19	M	No labs
	Tu	Lab 11: Acids, Bases, Buffers
	W	Lab 11: Acids, Bases, Buffers
	Th	Lab 11: Acids, Bases, Buffers
	F	Lab 11: Acids, Bases, Buffers
4/22- 4/26	M	No labs
	Tu	Makeups
	W	Makeups
	Th	
	F	