

Introductory Chemistry --- CHM 103

Course Information and Syllabus

Fall Semester, 2021

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Office Hours: 1:30 pm – 3:00 pm Monday – Friday or by appointment.

Required Learning Materials

- 1) *CHM 103 site within the Brightspace platform:* which will contain: Lessons, Skills Checks (Quizzes), Assignments, Discussions
- 2) *Digital Platform:* OWLv2: **Chemistry for Today: General, Organic, and Biochemistry**, Seager/Hansen, 9 Edition;” purchase from Cengage.com or URI Bookstore (6-month= \$105, 24-month= \$120). Course Key = [E-FHXL29C7GD58P](#)
For students who prefer a hardcopy textbook, rather than an online eReader, ANY recent edition of the Seager **Textbook: Introductory Chemistry for Today: GOB** hard copy textbook (published within the last decade) can be used.
- 3) Turning Technologies [NXT or QT clicker](#); purchase in Book Store or download clicker app for phone. <https://apps.apple.com/us/app/turningpoint/id300028504>
- 3) *CHM 103 Skills Practice Book:* Skills Summaries, One Page Lessons, and Practice Exam Questions; pdf files posted within the CHM 103 site. Printed and bound, soft back copies are available at URI Bookstore (\$20)
- 4) *Scientific calculator:* Logarithm and exponent functions needed for pH calculations.

Technology Requirements

To successfully complete this course, each student will need access to a computer with a reliable, high-speed internet connection and appropriate system and software to support the Brightspace learning platform. (One can use computers in the URI Library as well.)

Typical, well supported technology requirements for online courses at URI include:

Windows 7 (XP or Vista) or higher	Mac OS X or higher
• 64 MB Ram	• 32 MB Ram
• 28.8 kbps modem (56k or higher)	• 28.8 kbps modem (56k or higher)
• Sound card and speakers	• Sound card and speakers

•Ext headphones with build-in microphone	•Ext headphones with build-in microphone
• Mozilla Firefox 9.0 or higher	• Mozilla Firefox 9.0 or higher

Other requirements: Word 2007 (PC) 2011 (Mac) or newer, PowerPoint, Excel, (or Open Office), Adobe Flash, Adobe Acrobat Reader, Java.

Brightspace Help

- LMS Platform Access: <https://brightspace.uri.edu>
- Resource Page: <https://web.uri.edu/brightspace/>.

Course Learning Objectives

CHM 103 is a General Education science knowledge outcomes course tailored for students in the textile sciences, or in one of the allied health fields such as: nursing, nutrition and dietetics, exercise science, kinesiology, physical education, and physical therapy. Students will have the opportunity to master introductory chemistry principles. CHM 103 will provide insight into historical people and events related to chemistry. The course will also provide relevant examples of chemical principles in everyday life. This will advance students' scientific knowledge and increase their competency in critical thinking and computational skills; especially those identified as essential to success in their programs of study. These skills will be developed by solving chemical problems. These skills include: obtaining and evaluating the data / information needed to address a problem, identifying relevant approaches, recognizing an appropriate strategy, correctly implementing the selected problem-solving process, critically evaluating the outcome of that process, and clearly communicating the final result. Topics in this course include: matter and measurements; the structure of the atom; electronic structure and periodic law; forces between particles; states of matter; chemical reactions and stoichiometry; solubility and solutions; reaction rates and equilibrium; acids, bases, pH, and buffers.

Specific learning outcomes are provided in the CHM 103 Skills Practice Book.

Class Protocol

The Brightspace Learning Management System (LMS) is the University of Rhode Island, campus-wide, class-room management tool. Nearly all classes at URI have a web site on Brightspace as does CHM 103. Students should see a course tab for CHM 103 Introductory Chemistry Lecture when they open the main portal of Brightspace with their campus user-name and password, <https://brightspace.uri.edu/d2l/home>. The CHM 103 website on Brightspace will serve as our classroom for the fully-online CHM 103 course. Brightspace will be the main communication tool for announcements generated

by me. Grades will be kept on Brightspace. Students will be able to download old quizzes, and relevant videos from the Lessons section. Students may wish to refer to URI's [Brightspace tutorials](#) before getting started in the course, and refer back to the videos, as needed, throughout the course.

In an online learning environment, regular log-ins and active participation in Brightspace and OWLv2 sites cannot be overstated as this is how attendance in monitored and homework points are generated. There are 2-3 activities each week at those sites. The Schedule below gives suggested dates to do those activities. Following those suggestions, you will keep up with the class in a timely manner.

On eCampus, CHM 103 is scheduled at the following times. Let these times guide you for viewing slides and videos of the course, although you can do that at anytime.

Section 001: Tu and Th, 11:00 AM – 12:15 AM, in person

Section 002: Tu and Th, 3:30 PM – 4:45 PM, in person

Previously recorded video lectures will be made available in Brightspace online. You should take notes when in class as well as when watching these videos. This will aid your learning of the material and help you to do well on exams. There will be 4, one-hour, mid-term exams and a cumulative final.

Course Work Items

Brightspace LMS Skill Checks:

1. Boot Camp is a 10-day, pre-course activity held in Brightspace. The Boot Camp activities will help you to review your chemistry skills and introduce you to the class culture. Each Boot Camp activity will contain a 200-300 word lesson, followed by 1 or 2 video lessons, then a quiz called a Skill Check. Skill Checks will probe your understanding of key concepts, and push you to think carefully about the review skills you're learning. Each quiz is randomly generated from a pooled set of questions, each time you open the Skill Check. Each Skill Check can be taken up to seven times. Feedback is provided for any questions that was missed or incorrectly answered. After studying the feedback, you should re-take the Skills Check until you're confident you've maximized your learning, and can answer each question correctly. These points, and a capstone practice exam, will be used to help reduce the OWL homework load during the semester.

2. Lecture Prep Skill Checks precede each lecture during the regular class and make-up part of your homework points. These Skill Checks will also probe your understanding of key concepts, and push you to think carefully about new skills. These questions are also selected at random from a larger pooled set of questions. Each Skill Check can be taken up to seven times. Your highest score is captured in the grade book. You should re-

take the Skills Check, to answer a different set of questions, until you are confident you have maximized your learning and the points. Some of these Skill Check questions are included in the Skills Book. Many students record notes on these questions in their Skills Book since they are very similar to those types of problems included in the multiple-choice parts of exams during the semester.

3. OWLv2 usage:

The On-line Web Learning software, OWLv2, is a product of the Cengage company, who makes our text book. Homework assignments for CHM 103 will be completed in OWLv2. Students will need to register in OWLv2 using the registration card that comes inside the textbook, or purchased at the OWL portal below, which will get you an eCopy of the textbook. It is possible to purchase a registration card alone from the URI bookstore or on-line if you already have a text book. OWLv2 will be the main communication tool for homework related questions from students to me using my email address listed above. Students can get to our class portal for OWLv2 at:

[E-FHXL29C7GD58P](https://www.cengage.com/OWL/E-FHXL29C7GD58P)

The OWLv2 homework system was designed to help students both learn and practice the skills needed for success in their chemistry course.

Three types of assignments contribute to the OWL portion of each student's grade:

- 3.1) *mastery assignments* (with pooled, algorithmic questions),
- 3.2) *end-of-chapter (EOC)* problems.
- 3.3) *adaptive learning* problems.

You must stay on track and on time with your OWL homework, as each assignment will have a due date (corresponding to the timing of that topic in the course), and an unavailable date later on in the term. As long as you've started an assignment prior to its due date, you can continue working until the unavailable date. There is no late penalty. Due dates of missed OWL assignments will not be extended.

3.1) ***Mastery assignments*** require that you answer a certain number of questions correctly out of a Group (usually two out of three). There are usually 6-7 groups per assignments. The questions are pulled at random from a larger pool of questions each time you Retry the Group. You can retry a Group up to ten times to get full credit, but you'll have only one submission for each OWLv2 assignment. So do not submit the assignment until you have all the Groups correct. If you have trouble with a particular Group, try 6-7 times to get it right, then email me and we can go over it together before you submit the assignment for credit. You do not have to finish a whole assignment in one sitting, you can choose to Save and Exit the assignment and return to it later. Your

objective should be to go through each assignment until all the questions show the green check of a correct response. Students with higher exam grades tend to go through the cycle of getting the assignment correct more than once and utilize more of their ten allowed attempts to insure that they can do them all. These students carefully go through each assignment trying to learn as much as they can by working more of the challenging Mastery questions several times, in order to draw new questions from the pool and get additional skills practice. OWLv2 software will provide both skills practice opportunity and instant feedback on how you're progressing in building the needed skills.

3.2) **End of Chapter OWLv2 (EOC)** assignments are actually taken from the textbook so they are directly tied to the the topics discussed in the lectures. EOC assignments usually contain 10-14 problems, each of which you can do up to ten times. There are no groups as in the Mastery problems. The EOC problems are usually easier and there are more of them. EOC assignments have a submit button, which you can use only once.

3.3) **Adaptive learning** problems are the hardest of all and worth the most points. I recommend doing them before an exam, but after completing the EOC and Mastery problems. Adaptive learning problems must be done in a pre-test/post-test format, meaning you will have to do the some problems at least twice. There is no submit button, just a retake button. The Adaptive learning problems will self-submit on their unavailable date or once you get 100% correct after the due date. In the end, you will get partial credit for all partially completed adaptive learning OWLv2 work.

Academic Honesty

All forms of academic dishonesty, like cheating and plagiarism, are serious academic offenses and violations of the University Honor Code and are strictly forbidden. You must NOT cheat during exams and you must Not even give the appearance of cheating. Students should expect that disciplinary action will be taken. URI policy on academic honesty is detailed in the University Student Handbook, and is summarized here: Students are expected to be honest in all academic work. A student's name on ANY written work 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, and produced without assistance or properly attributed to its source.

The following are examples of academic dishonesty:

- Unauthorized possession or access to exams.
- Unauthorized communication during exams.
- Unauthorized use of another's work or preparing work for another student.
- Taking an exam for another student.
- Altering or attempting to alter grades.
- The use of notes or electronic devices such as computers, or cell phones to gain an

unauthorized advantage during exams.

- Facilitating or aiding another's academic dishonesty.

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

Fail the student for the assignment, request conduct action, or recommend that the student fail the course. A student who commits academic dishonesty will receive a failing letter grade for the exam and a possible failing grade for the course. Further sanctions may be imposed by the College Dean.

Hints for Success - PPP method (Prepare, Participate, Practice)

PREPARE: - Before class: Read the text material in preparation for the class as listed in the syllabus. **Review previous class notes. Record questions about unclear topics.** Complete and submit the assigned pre-lecture Skill Checks found in each daily Brightspace based Lessons. **Skill Checks** quiz in Brightspace Lessons will probe your pre-lecture understanding of key concepts, and push you to think carefully about the new skills you're learning. Try to learn as much as you can with these pre-lecture Skill Checks. There are 7 of these problems before each lecture and they consist of "pooled" questions – a set number of questions will be selected at random from a larger pool each time you open the Skill Checks. After you've completed (and received credit for) a Skill Check, you can re-open it to answer a different set of questions, and "skill-drill" until you can answer each question correctly.

PARTICIPATE: - During video lecture: Take notes and email any of your questions to me. Feel free to ask or email any question about a chemistry subject even a "stupid" one. If you are unsure what to do or what was said, so are others. Ask the question if not for yourself then for your fellow students. **Clickers** will be utilized in class as one of the forms of in-class response. Be sure to register your clicker, in the Turning Technologies website, [Turning Tech login](#). I will award 1 point for participation and 1 additional point for each correct clicker answer and apply it to your Homework account to help you reach **700** total points. The Skill Check questions and the OWLv2 questions are also included in your Homework account. I will keep a running tally of your total score. Your job is to get to a semester total of **700** total, combined Homework points from the combined sources of Clickers, Skill check and OWL. If you do any of the Boot Camp, I will add those points into your account as well in order to help you reach **700** total points. You should try to gain 50 points a week from all sources.

PRACTICE: - After video lecture: Reread your notes within 24 hours of the lecture and **fill-in any blanks**. Re-watch the video and see if you missed anything. Look over the appropriate pages in the Skills Book and read them to fill-in any blanks. **Write a**

question in the margin that will summarize each section. Answer these questions as you study the next day. **Do the weekly post-class OWLv2 assignments** by Sunday at 11:50 pm. OWLv2 is designed to HELP STUDENTS LEARN CHEMISTRY. Students will need to stay on track and on time with the OWLv2 assignments. Each assignment will have a due date that corresponds with the timing of each lecture topic. Ample time is provided to complete each assignment. Since the OWLv2 system is intended to be a key learning task in this course, the assignments may be worked in student study groups and/or with help from a tutor, or as open book exercises.

Students will need to receive credit for a total of **700** Homework problems from a combination of Boot Camp, Clickers, Skill check points, Brightspace pre-lecture Skill check points post-class OWLv2 assignments points. There are over 1200 points in these combined sources, so student do not need to do every problem. Historically, students who earn higher scores on their Final exam have done more than the required **700** points.

Grading Policy

Each student's lecture course grade will be assigned by me based on:

4 Cumulative Mid-Term Exams (15 % each).....	= 57 %	(400 pts)
Homework Score (Boot Camp, Brightspace, OWLv2)...	= 14 %	(100 pts)
1 Cumulative Final Exam (25 %).....	= 29 %	(200 pts)
Total.....	= 100 %.	(700 pts)

Grading will be as follows:

- at least 90% guarantees an A (A- or A)
- at least 80% guarantees a B (B-, B or B+)
- at least 70% guarantees a C (C-, C or C+)
- at least 60% guarantees a D (D or D+)
- less than 60% guarantees an F.

There are NO extra credit assignments. Completion of the full **700** Homework points will be scaled to equal an exam. Students with valid permission can apply to me to make up a missed Mid-term exams. In some valid permission cases, I may replace the missing grade with the average of your remaining 3 mid-terms. No student may just drop an exam and expect me to replace the grade by averaging without a valid, written medical, military or URI team or club related sports event. If you miss two or more Mid-term exams, you will need to repeat the course. All students must take the Final Exam.

Students need to successfully complete **700** Homework points using a combination of Boot Camp, OWLv2, Skill check points. This will be divided by 7 to get the 100 Homework Score mentioned above. If a student successfully completes more than **700** Homework points that is good, but it will be limited to 100 maximum Homework Score.

Important Fall, 2021 Semester Deadlines.

- Classes begin:Wednesday, Sept 08.
- Last day of eCampus open ADD period: Tuesday, Sept 14.
- Last day of eCampus to ADD with permission number:..... Tuesday, Sept 21.
- Last day to DROP courses with no transcript W:Wednesday, Sept 29.
- Last day to DROP courses without permission:.....Wednesday, Oct 20.
- Freshman mid-term grades posted in eCampus:.....Tuesday, Oct 26.
- THANKSGIVING Day recess, No Classes:Thur, Nov 25 – Sun Nov 28.
- Last Day of Classes:Monday, Dec 13.
- Final Grades Due in eCampus by 12:00 noon:Monday, Dec 29.

CHM 105 Lab grades are separate and will be determined by the lab instructor.

Introductory Chemistry --- CHM 103

Course Schedule for Fall Semester, 2021

Week #	Tuesday	Thursday
1	9/07 No Classes – Advising Day HW: Register Clicker, Do OWLv2 Intro 1 & 2	9/09 - Lesson 1 - Gen Course information Ch 1: Matter, Measurements, Calculations HW: Math 1-2, 1.2, 1.4 and EOC 1.1
2	9/14 - Lesson 2 Ch 1: Matter Measurements Calculations HW: Math 3, and 1.6, 1.7, 1.8 and EOC 1.2	9/16 - Lesson 3 Ch 1: Matter Measurements Calculations HW: 1.9, 1.10, 1.11 and EOC 1.3
3	9/21 - Lesson 4 Ch 2: Atoms and Molecules HW: Math 4, and 2.1, 2.2, 2.3, 2.4 and EOC 2.1	9/23 - Lesson 5 Ch 2: Atoms and Molecules HW: 2.5, 2.6, 2.7 and EOC 2.2
4	9/28 - Lesson 6 EXAM 1 Chapters 1-2 HW: Finish what you got open.	9/30 - Lesson 7 Last Day to Drop - 9/30. Ch 3: Electronic Structure, Periodic Law HW: 3.1, 3.2, 3.3 and EOC 3.1
5	10/05 - Lesson 8 Ch 3: Electronic Structure, Periodic Law HW: 3.4, 3.5, 3.6 and EOC 3.2	10/07 - Lesson 9 Ch 4: Forces Between Particles HW: 4.1, 4.2, 4.3 and EOC 4.1
6	10/12 - Lesson 10 Ch 4: Forces Between Particles HW: 4.4, 4.5, 4.6, 4.8 and EOC 4.2	10/14 - Lesson 11 Ch 4: Forces Between Particles HW: Math 5 and 4.9, 4.10, 4.11 and EOC 4.3
7	10/19 - Lesson 12 Last Day to Withdrawal EXAM 2 Chapters 3-4 HW: Finish What you got open	10/21 - Lesson 13 Ch 5: Chemical Reactions HW: 5.1, 5.3, 5.4, 5.5, 5.6 and EOC 5.1
8	10/26-Lesson 14 Freshman MidTerm Grades Chemical Reactions HW: 5.8, 5.9, 5.10, 5.11, EOC 5.2 and EOC 5.3	10/28 - Lesson 15 Ch 6: States of Matter HW: Math 6, and 6.1, 6.2, 6.6, 6.7, 6.8, EOC 6.1
9	11/02 - Lesson 16 Ch 6: States of Matter HW: 6.8, 6.9, 6.12, 6.13 and EOC 6.2	11/04 - Lesson 17 Ch 6: States Matter + Ch 7: Soln and Colloids HW: 6.15, EOC 6.3 + 7.1, 7.2, 7.3 and EOC 7.1
10	11/09 - Lesson 18 Ch 7: Solutions and Colloids HW: 7.4, 7.5, 7.6 and EOC 7.2	11/10 - Lesson 19 – Wednesday Not Thurs. Ch 7: Solutions and Colloids HW: 7.7, 7.8 and EOC 7.3
11	11/16 - Lesson 20 EXAM 3 Chapters 5-6-7 HW: Finish what you got open.	11/18 - Lesson 21 Ch 8: Reaction Rates and Equilibrium HW: 8.1, 8.2, 8.3, 8.4, 8.5, 8.6 and EOC 8.1
12	11/23 - Lesson 22 Ch 8: Reaction Rates and Equilibrium HW: Math 7, 8.7, 8.8 and EOC 8.2	11/25 - Lesson 23 No Classes – Thanksgiving Day Holiday HW: Finish what you got.
13	11/30 - Lesson 24 Ch 9: Acids, Bases and Salts HW: 9.1, 9.2, 9.3, 9.4, 9.5 and EOC 9.1	12/02 - Lesson 25 Ch 9: Acids, Bases and Salts HW: 9.6, 9.7, 9.8, 9.9, 9.10 and EOC 9.2
14	12/07 - Lesson 26 Ch 9: Acids, Bases and Salts HW: 9.11, 9.12, 9.13, EOC 9.3 and EOC 9.4	12/09 - Lesson 27 EXAM 4 Chapters 8-9 HW: Finish what you got open.
15	12/14 – Reading Day Review session, Come to your normal class period. HW: Finish OWL problems.	FINAL EXAM – room 100 Beaupre Section 001: 11:30am -1:30pm, Tues, 12/21 Section 002: 6:30 - 8:30 pm, Thur, 12/16