



<b>Semester:</b> Fall 2019	<b>Instructor:</b> Dr. Tim Howes
<b>Class Info:</b> CHEM 105	<b>Office Location:</b> Jepson 202
<b>Location/Room:</b> Jepson 229 and Jepson 109 (lab)	<b>Office Hours:</b> <b>12:30pm - 2:30pm: Tuesdays &amp; Thursdays</b>
<b>Class Name:</b> Chemistry and Society	* All of these office hours are subject to various meetings/appointments. Please contact me if you would like a specific meeting time.
<b>Class Days/Times:</b> T & Th 3:30pm – 4:45pm T/Th 5:00pm – 7:15pm (lab)	Furthermore, if these times do not work for you, contact me and we can schedule a different time.
<b>Class Credits:</b> 4	<b>Instructor E-mail:</b> <a href="mailto:thowes@umw.edu">thowes@umw.edu</a>

### Land acknowledgement:

The University of Mary Washington is located on unceded Powhatan and Monacan land. The first indigenous people killed by white settlers were Powhatan, while the Monacan Nation was not officially recognized by the Commonwealth of Virginia until January 2018.

### Course Description

CHEM 105 is a class discussing societal problems and issues involving an understanding of important chemical principles with emphasis on relevant applications and the enhancement of chemical literacy for the non-scientist. Laboratory. Does not satisfy any major program requirements or serve as a prerequisite to any other chemistry courses. This is the first half of a year-long course designed for *non-majors*.

### Required Materials

- *Chemistry in Context – Applying Chemistry to Society*. Eubanks, L.P., Middlecamp, C.H., Heltzel, C.E., and Keller, S.W. 9<sup>th</sup> Edition, McGraw Hill, 2018
- *Chemistry in Context Laboratory Manual*, Sixth Edition, McGraw-Hill, 2009.
- Any calculator.
- Approved safety goggles and laboratory coat for laboratory
- Blue or black ink pen for laboratory

### Grading Policy and Grading Scale

The final course grade will be calculated as follows:

- |   |     |
|---|-----|
| • Lecture average (exams, quizzes, assignments, etc.) | 55% |
| • Cumulative final exam                               | 20% |
| • Lab average   | 25% |

There will be three exams during the semester, not counting the final exam. Their dates will be announced shortly after class starts and this document will be updated on Canvas.

The final course grade will be based on the following point scale:

Points accrued	Letter grade	Points accrued	Letter grade
≥ 93 %	A	76.9-73.0 %	C
92.9-90.0 %	A-	72.9-70.0 %	C-
89.9-87.0 %	B+	69.9-67.0 %	D+
86.9-83.0 %	B	66.9-60.0 %	D
82.9-80.0 %	B-	≤ 59.9 %	F
79.9-77.0 %	C+		

A mid-semester report of unsatisfactory (U) will be reported if you have a C- or below in the course thus far.

I would recommend that you keep all graded work with you until the end of the semester, so that any discrepancies in grades can be resolved easily. Also, when the semester ends, if you are not going to keep any of your papers, please put them in the **recycling bin** and not the trash can, thank you!

### Attendance Policy

Class attendance is strongly encouraged. You are responsible for all materials presented in class even if you are absent. The powerpoints will be put up on Canvas.

**Attendance in the laboratory is mandatory. Unexcused absences from laboratory cannot be made up and will count as a zero lab grade.** Excused absences may be made-up, if possible, at the discretion of the instructor. If you have to miss a laboratory due to an **emergency** or if you expect to be absent due to an intercollegiate athletic event, etc., you should inform the instructor in advance of the original time and date of the lab.

**It is also imperative that you be on time for the laboratory.** The pre-lab lectures cover important safety and procedural information. If an individual is repeatedly tardy, a **grade deduction** will occur for each instance or the student will not be permitted to perform the experiment.

It is absolutely critical that you respect the dangers inherent in laboratory space. **If I feel your behavior is seriously unsafe to either you or your classmates, you will be asked to leave immediately and will receive a zero for that day's effort.**

Be sure to bring the laboratory manual, lab coat, and goggles to each experiment. Failure to bring the appropriate materials to the laboratory may result in a penalty to your grade.

No eating or drinking in the lab. **Laboratory exercises must be read prior to class.**

You should complete as much of the work as possible during the assigned laboratory time. No unauthorized access to the laboratory is permitted. All experiments must be completed when the instructor is present.

Also, when the semester ends, if you are not going to keep any of your papers, please put them in the **recycling bin** and not the trash can, thank you!

### Canvas

You must have access to Canvas (<https://canvas.umw.edu>). Frequently, pertinent articles will be handed out in class or posted on Canvas and the contents thereof will be included in the required information for quizzes and exams. Assignments, announcements and other information will also be posted on Canvas for reference.

## **Laboratory Safety**

This course involves laboratory work and has potential risks, such as exposure to hazardous chemicals and minor injuries, such as cuts and burns. Each student will be trained in basic laboratory safety and given information about the requirements for personal protection. Students will be provided information about accessing material safety data sheets, which provide information about specific chemical hazards. During the first laboratory period of this semester, the safety rules will be presented and reviewed. In order to participate in this course, each student must sign a statement in which he or she acknowledges the risks associated with the course and agrees to follow all safety rules and to assume responsibility for his or her actions in the laboratory.

## **General Education and Course Specific Learning Objectives**

This course in part satisfies the Natural Science General Education requirement. After completing the course sequence, a student should be able to:

1. Students will be able to describe the scientific methods that lead to scientific knowledge.
2. Students will be able to report and display data collected, interpret experimental observations and construct explanatory scientific hypotheses.
3. Students will be able to use theories and models as unifying principles that help us understand the natural world.
4. Students will gain an understanding for how the natural sciences are used to address societal issues.

## **My Advice for College Classes**

1. Show up to class!
2. Read the text book!
3. Ask questions, either in class or at office hours.

## **Policy on Recording Lectures**

You may make audio recordings of my lectures, just please let me know. If a student is talking for an extended period of time (eg. giving a presentation, not just asking a question) you may NOT record other students. If you would like to record video of the lectures, you must run that by me first. Video recordings must be taken from a fixed position and not contain footage of other students. You should delete all of your recordings at the end of the semester. All lectures will be uploaded to canvas after the class finishes.

## **Laboratory Reports**

Laboratory data and observations are recorded in ink. You should turn in your lab notes to me stapled to your lab report. The report itself will consist of answering a set of questions uploaded to canvas. These answers should be complete sentences.

## **Office of Disability Services**

The Office of Disability Services has been designated by the University as the primary office to guide, counsel, and assist students with disabilities. If you receive services through that office and require accommodations for this class, please make an appointment with me as soon as possible to discuss your approved accommodation needs. Bring your accommodation letter with you to the appointment. I will hold any information you share with me in the strictest confidence unless you give me permission to do otherwise. If you need accommodations, (note taking

assistance, extended time for tests, etc.), I would be happy to refer you to the Office of Disability Services. They will require appropriate documentation of a disability. Their phone number is 540-654-1266.

If you have allergies to any chemicals or other emergency medical information, or have any other special needs, please notify your instructor ASAP.

### **Title IX Statement**

University of Mary Washington faculty are committed to supporting students and upholding the University's *Policy on Sexual and Gender Based Harassment and Other Forms of Interpersonal Violence*. Under Title IX and this Policy, discrimination based upon sex or gender is prohibited. If you experience an incident of sex or gender based discrimination, we encourage you to report it. ***While you may talk to me, understand that as a "Responsible Employee" of the University, I MUST report to UMW's Title IX Coordinator what you share.*** If you wish to speak to someone confidentially, please contact the below confidential resources. They can connect you with support services and help you explore your options. You may also seek assistance from UMW's Title IX Coordinator. Please visit <http://diversity.umw.edu/title-ix/> to view UMW's *Policy on Sexual and Gender Based Harassment and Other Forms of Interpersonal Violence* and to find further information on support and resources.

### **Resources**

Tiffany W. Oldfield, J.D.  
Title IX Coordinator  
Office of Title IX  
Fairfax House  
540-654-5656  
toldfiel@umw.edu

Myranda Thomson  
Title IX Deputy for Students  
Area Coordinator  
540-654-1184  
mthomson@umw.edu

### **Confidential Resources**

*On-Campus*  
Talley Center for Counselling Services –  
Lee Hall 106

Student Health Center  
Lee Hall 112

*Off-Campus*  
Empowerhouse  
540-373-9373

RCASA  
540-371-1666

## Tentative Class Schedule

## Chemistry 105

Week	Week of	Activities
1	8/26	<input type="checkbox"/> Introduction & Chapter 1 <input type="checkbox"/> Lab Safety
2	9/2	<input type="checkbox"/> Chapter 2 <input type="checkbox"/> Lab – Scientific Method
4	9/9	<input type="checkbox"/> Chapter 2 <input type="checkbox"/> Lab 1 – Preparation and Properties of Gases in Air
5	9/16	<input type="checkbox"/> Chapter 3 <input type="checkbox"/> Lab 6 – Color and Light
6	9/23	<input type="checkbox"/> Chapter 3 <input type="checkbox"/> Lab 8 – Molecular Models, Bonds, and Shapes
7	9/30	<input type="checkbox"/> <b>TEST 1 on 10/1</b> <input type="checkbox"/> Chapter 4 <input type="checkbox"/> Lab 11 – Verifying Molar Ratios
8	10/7	<input type="checkbox"/> Chapter 4 <input type="checkbox"/> Lab 13 – Comparing the Energy Content of Fuels
	10/12 – 10/15	<input type="checkbox"/> Fall Break, no classes. (Residence halls remain open)
9	10/17 (Thursday)	<input type="checkbox"/> Chapter 5 <input type="checkbox"/> No lab
10	10/21	<input type="checkbox"/> Chapter 5 <input type="checkbox"/> Lab 15 – Analysis of Vinegar
11	10/28	<input type="checkbox"/> <b>TEST 2 on 10/30</b> <input type="checkbox"/> Chapter 6 <input type="checkbox"/> Lab 13 – Comparing the Energy Content of Fuels
12	11/4	<input type="checkbox"/> Chapter 6 <input type="checkbox"/> Lab 18 – Analyzing Water
13	11/11	<input type="checkbox"/> Chapter 6 <input type="checkbox"/> Lab 19 – Reactions of Acids with Common Substances
14	11/18	<input type="checkbox"/> Chapter 6 <input type="checkbox"/> Online lab, no physical lab
15	11/25	<input type="checkbox"/> Thanksgiving break, no classes
16	12/2	<input type="checkbox"/> <b>TEST 3 on 11/26</b> <input type="checkbox"/> Chapter 7 <input type="checkbox"/> Lab 20 – Characterizing Acidic and Basic Materials
Final Exam	12/10	<input type="checkbox"/> <b>Comprehensive Final Exam</b> <input type="checkbox"/> 3:30pm – 6:00pm, Jepson 229
		<input type="checkbox"/>

Other important dates:

- Friday, Aug. 30<sup>th</sup> – Last day to add classes (5:00pm).
- Friday, Sept. 13<sup>th</sup> – Last day to drop without a W.
- Friday, Oct. 25<sup>th</sup> – Last day to withdraw without an F (or change from P/F to letter grade)
- Saturday, Dec. 14<sup>th</sup> – Residence halls close at 10:00am.