

## CHEMISTRY 301

Fall 2020

### Syllabus

**Text:** Donald A. McQuarrie and John Simon, *Physical Chemistry, A Molecular Approach*, University Science Books: Sausalito, CA, ISBN: 978-0935702996 (1997)

**Instructor:** J.C. Poutsma, Office: ISC 1054, email: [jcpout@wm.edu](mailto:jcpout@wm.edu). email is the preferred method of communication.

**Course Goals:** This course is intended to give a full treatment of quantum mechanics, spectroscopy, and kinetics. Physical chemistry students should be able to understand both the theory behind and the derivations leading to the topics that we discuss. In addition, students will be expected to work a variety of real-work examples in QM, spectroscopy and kinetics.

**Lectures:** **Monday, Wednesday, Friday, 10:00-10:50 AM, via Zoom.** Lectures will be given synchronously and will be recorded. It is HIGHLY RECOMMENDED that you attend the synchronous lectures. This material is not intuitive and it is vital that you be able to ask question of me in real time.

Lecture Zoom link:

<https://cwm.zoom.us/j/98001782714?pwd=eDdsRXgxbExSNmdoK2xUUkJpdIRTdz09>

Meeting ID: 980 0178 2714

Passcode: 386578

**Office hours via Zoom: W (1:30–3:00); R (1:30-3:00) or by appointment**

Wednesday Meeting:

<https://cwm.zoom.us/j/96513552393?pwd=OHFVZk4vbEdFcklLUEFLVHlONEhvUT09>

Meeting ID: 965 1355 2393

Passcode: 46400

Thursday Meeting:

<https://cwm.zoom.us/j/98554477929?pwd=WTAwM3pBL29GU0puUUZ4UU9YZzdDZz09>

Meeting ID: 985 5447 7929

Passcode: 377759

**Examinations:** I intend to give five 50-point quizzes during the semester. The lowest grade from the five quizzes will only count half. The total “exam” grade will therefore be out of 225 points. All quizzes will be given during the Thursday Evening session of the course (7-7:50) in ISC 1221. The quizzes will be designed to take ½ hour but you will have the full 1 hour and possibly a bit more if space allows.

At the time of the creation of this document, upper classmen will not be on campus until after Labor Day. I have scheduled the first quiz for the Thursday immediately following (September 10<sup>th</sup>). If upper classmen are allowed to return to campus, I expect all students to take these quizzes in person. MASKS AND SOCIAL DISTANCING WILL BE REQUIRED. For those students with health concerns or for those who are not able to return to campus, arrangements will be made to allow the quizzes to be taken synchronously using

Blackboard/Honor Lock. If we go fully remote, I will expect all students to take the quizzes synchronously using Blackboard/Honor Lock. Those students that do not wish to be monitored by Honor Lock during remote exams should not take the course and should drop immediately.

I have TENTATIVELY scheduled the quizzes and tests as follows: These may change during the semester. They will not shift to an earlier date, and ample notice will be given if they shift to a later date:

Quiz 1: Thursday Sept. 10<sup>th</sup> 7:00-8:00 (Chap. 1 -4 MQ: intro to QM/postulates/boxes)  
Quiz 2: Thursday Sept. 24<sup>th</sup> 7:00-8:00 (Chap. 5, 13: Uncert. Princ./HO/RR/vib&rot spec)  
Quiz 3: Thursday Oct. 15<sup>th</sup> 7:00-8:00 (Chapters 6-8: H atom/He atom/atomic spect.)  
Quiz 4: Thursday Oct. 29<sup>th</sup> 7:00-8:00 (Chapters 9, 10, 13: MO theory and molec, spect.)  
Quiz 5: Thursday Nov. 12<sup>th</sup> 7:00-8:00\* (Chapters 27-29: KMT/Chemical Kinetics)

### **Additional Meetings:**

A normal semester has ~41 lectures. Due to the shortened schedule this fall, we only have 38 scheduled meetings. The Provost has given us the flexibility to add up to 3 evening or weekend lectures if needed. I am scheduled to finish the materials for each quiz no later than the Monday before your Thursday night quiz. I reserve the right to hold an additional meeting sometime between 11 AM Friday the week before and 5 PM Monday the week of your quizzes, in case we get behind. I will try my best not to use these extra meetings.

### **Key Dates:**

Add/drop deadline is **Friday August 28<sup>th</sup>**. Last day to withdraw from class is **Monday October 12<sup>th</sup>**.

**Final Exam:** Monday Nov 23<sup>th</sup> 2:00 – 5:00 (all of the above, 150 points. Should take two hours, you will get all three plus more if space allows). The Exam must be taken synchronously and will be administered through Blackboard/Honor Lock.

**Homework Sets:** Working problems is important for reinforcing the chemical principles emphasized in the lecture and text. There will be 7 problem assignments during the semester. The problem set deadlines (once announced) are firm; no extensions will be given. You must work in small groups (3 or 4). Groups should turn in only one copy of the homework, each student will receive the same grade.

### **Grading:**

Homework: (75 points, 16.66%)  
Tests: (225 points, 50%)  
Final exam: (150 points, 3.33%)  
Total: (450 points)

**Help Sessions:** Every Thursday that there is not a quiz, we will have an optional problem session from 7:00 – 8:00 in ISC 1221 (or remotely by Zoom). There will be at least one help session before each HW is due.

<https://cwm.zoom.us/j/98859242226?pwd=RHI3cjJwcC9qVVlnOdsRmsvYXIUUT09>

Meeting ID: 988 5924 2226  
Passcode: 555822

**Honorlock for Remote Exams**

All remote quizzes and exams will be administered using Blackboard and Honorlock. The College has prepared a FAQ for this service, which I encourage you to read.

[https://www.wm.edu/offices/deanofstudents/.../honorlock\\_student\\_faqs](https://www.wm.edu/offices/deanofstudents/.../honorlock_student_faqs)

**COVID-disclaimer:** This syllabus was prepared under the current Virginia state-mandated Phase 3 restrictions of July 31, 2020 in place that restrict gatherings of more than 50 individuals. Classes of over 50 people will therefore be fully remote until at least Labor Day (Monday Sept. 7, 2020). Since the virus is unpredictable and directives from the Governor are ever evolving, this syllabus is subject to change with little or no notice. ALL LECTURES WILL BE GIVEN SYNCHRONOUSLY VIA ZOOM FOR THE SEMESTER. If the Governor lifts the restrictions of gatherings of 50 individuals, Thursday night quizzes will be held in person in room 1221 from 7-8. If the Governor does not lift the restriction on gatherings of more than 50 individuals or if the College switches to full remote instruction, the Thursday night quizzes will be taken remotely and synchronously.