

**FLORIDA INTERNATIONAL UNIVERSITY**  
**CHM3400 – FUNDAMENTALS OF PHYSICAL CHEMISTRY**  
**SPRING 2021**

Instructor: Jeff Joens  
Office: CP 331; phone 348-3121 (voice mail)  
Web page: [www.joenschem.com](http://www.joenschem.com)

Time: M,W,F 1:00pm to 1:50pm  
Room: remote/PG5-Room 134  
e-mail: joensj@fiu.edu

Office hours: Tuesday and Thursday 11:00am to noon, Friday 2:00pm to 3:00pm.

**MODIFICATION DUE TO CORONAVIRUS:** Lectures will initially be given remotely at the time the class is scheduled via ZOOM, and office hours will also initially be via ZOOM. In class lectures and office hours will resume when (if) it becomes safe to do so.

Course objective: To provide in one semester coverage of fundamental topics in physical chemistry.

Prerequisites: Math, up to MAC 2312 (Calculus 2); Physics, up to PHY 2049/L or PHY 2053/L (Physics 2); Chemistry, up to CHM 3120/L (Introduction to Analytical Chemistry).

Text: P. W. Atkins, J. de Paula, Elements of Physical Chemistry, 7<sup>th</sup> Edition (ISBN: 9780198796701), plus handouts.

|          |                                |                   |
|----------|--------------------------------|-------------------|
| Grading: | 3 hour exams (100 points each) | 300 points        |
|          | Homework                       | 50 points         |
|          | Final exam (comprehensive)     | <u>200</u> points |
|          | TOTAL                          | 550 points        |

- Notes: 1) Final grades will be based on total accumulated points.  
2) The final exam will be comprehensive. You must take the final exam to pass the course.  
3) Excused absences from exams will be by permission of the instructor only. If you are forced to miss an exam, you are expected to notify me in a timely manner.  
4) Homework assignments will be given approximately once a week, and will be collected and graded. Late homework will not be accepted. Your five highest grades on homework will be used to determine your homework grade, which represents 50 points towards the final grade in the class. Homework solutions will be available on my web page ([www.joenschem.com](http://www.joenschem.com)) as will other course material.  
5) As per University policy, a grade of incomplete will only be given "...for work not completed because of serious interruption not caused by the student's own negligence." An incomplete will only be given after consultation with me and a written agreement outlining the reason for the incomplete and a timetable for making up the missing work.

**Disability Resource Center** provides assistance for students with a disability. I will make accommodations for students with a disability as needed under the advisement of the Disability Resource Center located in GC-190. (305-348-3532). Their website is: <https://studentaffairs.fiu.edu/get-support/disability-resource-center/>

**Academic misconduct:** Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook. **Cheating is unfair to your honest classmates and absolutely will not be tolerated.** The first such infraction will be dealt with to the fullest extent permissible by the university. Cheating includes (**but is not limited to**) any form of inter-student collaboration on exams, use of prohibited materials or devices during exams (viz. the textbook, a cell phone), altering an exam after it is returned and then asking it be regraded, and plagiarism. For more information go to: <https://online.fiu.edu/faculty/resources/university-resources/academic-misconduct-policies-and-procedures.php>

Tentative course outline

Chapter 1 – The properties of gases

Chapter 2 – The First Law of thermodynamics

Chapter 3 – The Second Law of thermodynamics

**First Hour Exam, Friday, February 12<sup>th</sup>**

Chapter 4 – Physical transformation

Chapter 5 – Chemical change

Chapter 6 – Chemical kinetics

**Second Hour Exam, Friday, March 12<sup>th</sup>**

Chapter 7 – Quantum theory

Chapter 8 – Atomic structure

Chapter 9 – The chemical bond

**Third Hour Exam, Friday, April 9<sup>th</sup>**

Chapter 11 – Molecular spectroscopy

**FINAL EXAM: Monday, April 19<sup>th</sup> (12:00pm to 2:00pm)**

The above course outline is rather ambitious, and we may in fact not cover all of the topics listed. If there are any changes to the above outline (material covered for an exam, for example) they will be announced at least one week before an exam is given.