**Wichita State University**

Chemistry 211, Spring 2018 (**UPDATED**)

**Instructor**

Dr. Alexandre A. Shvartsburg

Office: McKinley Hall (MC), Rm. 318

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Contact by e-mail is encouraged, but reply may be delayed by instructor’s travel or research work.

**Course summary**

Prerequisites: Chem 110/101, or Chem 103, or high-school chemistry or physics

(No credit allowed for **both** Chem 103 and 211)

Credit: 5 hours

Lectures: Mon., Wed., Fri.: 11.30 AM - 12.20 PM

McKinley Hall (MC) 224

A general education intro course for students who (expect to) major in a natural science. Together with Chem 212, provides the pre-requisite for upper-division chemistry courses.

Teaches basic chemistry concepts including: atoms, molecules and their structure, chemical reactions

and equations, states of matter and thermodynamics.

Students are expected to spend at least 45 hours of total study time

(including the lecture attendance, labs, homework, and self-study) for each unit of credit.

This means 225 hours for the course or about 15 hours weekly.

**Required materials**

1. **Main Textbook**: Burdge, Overby, “Chemistry Atoms First”, 3rd edition (2017), McGraw Hill.

Print edition (hardcopy or loose-leaf) available in WSU bookstore, about $ 200 - 300

Available online (Amazon) from about $ 160.

The 2nd edition (2014) available online from about $ 30, similar but with some differences.

1. **Lab Manual: All labs posted on Blackboard (unlike previous years).**

**The lab schedule is also posted.**

1. **ALEKS** - online homework and assessment software ($ 60 for 6-month access).

Optionally provides the main text in latest 3rd edition (not the lab manual) as an e-book for $ 90

(also with 6-month access).

Information about ALEKS and instructions to register are posted separately.

**Lecture etiquette**

Cell phones are to be turned off or silenced. Conversations or eating are not allowed.

A beverage with a lid is allowed. On exams, please distribute yourself evenly over the auditorium.

Disruptive individuals may be asked to leave class.

**Evaluations**

**Exams**: Four exams will be given on the dates to be announced. No make-up exams are given.

A cumulative Final exam (American Chemical Society [ACS] national exam) will be given

according to the final exam schedule. Exams may have multiple versions of equal difficulty,

equivalent in substance and number of questions but differing in specific values and order of questions.

With prior notice and good reason (typically medical certified by a physician or travel to scientific, educational, or athletic events/conferences on behalf of WSU with proper documentation),

absence on **one** regular exam will be excused with the grade pro-rated based on the ACS Final Exam.

Missing the Final cannot be excused (by ACS program certification regulations).

The Final is a multiple-choice exam. Other exams comprise both multiple-choice questions and those requiring a short answer (solution). The periodic table and selected (not all) equations will be provided.

Additional regulations regarding the Final will be discussed prior to it.

**Labs**: Completing 9 labs is required for a grade for the course: 10 labs are scheduled and the Lab 10 points can be doubled to replace a missed lab. Lab write-ups are due at the end of the next lab session, unless otherwise directed. Consult your lab teaching assistant (TA) for further information. The conduct and grading of labs is largely at the discretion of TA: the instructor would not get involved except in a case of gross negligence or misconduct by the TA.

**Quizzes**: A quiz (~10 min) will be given on most Mondays, usually including recent homework question(s). About three quizzes will be take-home. The best 10 (out of about 13) grades will be kept.

**There are no make-up quizzes.**

**ALEKS:** The homework grade is determined based on

(i) mastery of topics completed at the semester end (ALEKS pie) - 50%

(ii) completion of topics on-time - 50%

**Taking ALEKS assessment seriously and doing them without help is CRUCIAL.**

Otherwise, already completed topics may be added back to your pie and/or or you may be presented

with the topics substantially more advanced than your current capabilities.

Both will negatively affect your course grade.

Detailed information about ALEKS is in a separate handout (also posted on the Blackboard).

**All questions regarding access, functionality, options etc. should be addressed to their support,**

**not the instructor (who has only a limited and possibly dated knowledge of those aspects).**

**Grading**

**Distribution of points** (out of 1000 total): Exams 4 x 80 pts. each 320 (32 %)

Lab 200 (20 %)

Quizzes 10 x 10 pts. each 100 (10 %)

Homework (ALEKS) score 200 (20 %)

Final (ACS exam) 180 (18 %)

Some (not multiple-choice) exam questions allow partial credit at the discretion of instructor or grader.

As all of us, graders can make mistakes. Claims of an obvious mistake in grading or score addition must be submitted within one week of the exam return. No markings or alterations should be made on the exam. Note that the whole exam will be re-graded. That may detect other errors, causing the overall grade to go up or down.

The departmental guideline (for undergraduate courses) is the mean grade of 70%.

If necessitated by a large deviation from that, the points will be adjusted on a curve.

That would apply to the total at term end before the final grade assignment. Individual exams, quizzes, and labs are scored without curving, but grade indications per score ranges will be given

University uses a +/- grading scale for final grades and to calculate the GPA.

Following the general policies, the gross (curved) point ranges are:

A 900 - 1000 C 680 - 719

A- 850 - 899 C- 650 - 679

B+ 820 - 849 D+ 620 - 649

B 780 - 819 D 580 - 619

B- 750 - 779 D- 550 - 579

C+ 720 - 749 F Under 550

Grades below C- are considered unsatisfactory.

**Incompletes:** All conditions below must be met before the grade **I** (incomplete, for not completing the course during the semester) can be considered:

a. The student fills "Request for an Incomplete", including all the needed information and signatures

b. No more than two weeks of classes remain in the semester

c. Only one course requirement is incomplete due to circumstances beyond the student’s control

d. The performance (at the time of request) warrants a passing grade other than for said one requirement

**Important Dates**

First day of class: January 17 (Wednesday)

**Last day for lab grade transfer: January 22 (Monday), in Chemistry Dept. Office**

Last day to drop with 100% tuition refund: January 29

Spring Break (no class): March 19 - 25

Last day to drop with “W”: March 30

Last day of class: May 2 (Wednesday)

**Final (ACS) exam: May 7 (Monday), 11 AM - 1 PM, Room MC 224 (same auditorium)**

**Tentative dates of intermediate exams**

Feb. 9: Chapters 1, 2, 3 and 4

March 9: Chapters 5, 6, and 7

**April 4: Chapters 8 and 9**

May 2: Chapters 10, 11 and part of 12

These dates are necessarily approximate at this point, may be adjusted as the semester progresses

**Supplementary Instruction (SI)**

Group study sessions provided to go over aspects of class lectures, work additional problems and help with online homework, review exams and quizzes, and generally answer technical questions about the course material (SI leader has no access to grades). Normally three sessions weekly (one per lecture) timed considering the schedules of most students: regular attendance is recommended and correlated with student success in class.

SI Instructor: Sharon Pullins

Will introduce herself during the first two class sections

**Academic integrity**

All work received from a student must be their own. No extra materials may be used during a test without prior approval. No programmable calculators or cell phones can be used on examinations and quizzes.

(Although many cell phones include calculators, a separate calculator without connectivity is required.)

Dishonesty, cheating, and plagiarism will be firmly prosecuted in line with the university policy.

Consequences range from a zero score for the assignment to "F" for the course and administrative action.

**Disability Services**

If you have a physical, psychiatric/emotional, or learning disability that may affect your ability to carry out the assigned course work, you may contact the Office of Disability Services (DS, Grace Wilkie Annex, room 150, 978-3309). DS will review your concerns and determine appropriate accommodations. All information and documentation of your disability is confidential and will not be released by DS without your permission.

This syllabus is a guideline and summary, not a complete or binding contract.

The rules and policies described may be adjusted and updated as the semester progresses.

**Policies on Concealed Carry**

The lab part of this course takes place in spaces requiring students to leave belongings such as backpacks and purses away and unattended for the class duration. Students who choose to carry a concealed handgun in a purse, backpack, or bag must review and plan each day accordingly, and are responsible for making alternate arrangements as necessary. The university does not provide appropriate secured storage for concealed handguns.

Individuals who violate the WSU weapons policy may be asked to leave campus with the weapon and may face disciplinary action under the appropriate university code of conduct.

CHEM 211 Spring 218 Laboratory+

*Laboratory Requirements*-9 completed labs are required for a grade for the course, 10 labs will be scheduled. Lab # 10 can be doubled to replace a missed lab (form must be filled out and submitted to your TA). Prelab write-ups are due at the beginning of the lab session and the lab must be turned at the beginning of the next lab session. Quizzes will be given in the recitation sections. A passing grade in the laboratory is required to pass the course.

*Laboratory Makeups* **-**The only good reason for missing a lab is your own illness. If you are sick you must notify your T.A. that day. One lab can be made up by doubling the last lab as described above.

*Laboratory Checkout***-**You must checkout and pay for any breakage or you will be assessed $100 and given an incomplete until the bill is paid. All unpaid bills are entered on banner at the end of the semester.

Laboratory Assignments

|  |  |  |  |
| --- | --- | --- | --- |
| Lab | Week of | description | points |
|  |  | safety lecture 1/17 or 1/18 |  |
|  | 1/22 | check in |  |
| 1 | 1/29 | Density lab | 10 |
| 2 | 2/5 | Emission Spectra and the Electronic Structure of Atoms | 10 |
| 3 | 2/12 | The Estimation of Avogadro’s number | 10 |
| 4 | 2/19 | Observing the Reactions of Household Chemicals: / pH/Lead testing | 10 |
| 5 | 2/26 | Determination of a Chemical Formula: I with Zn | 10 |
| 6 | 3/5 | The Chemistry of Oxygen | 10 |
| 7 | 3/12 | An introduction to titrations | 10 |
| 8 | 3/26 | Determination of a Chemical Formula by Titration: Ca with H2O | 10 |
| 9 | 4/2 | A Cycle of Copper Reactions | 10 |
| 10 | 4/9 | Calorimetry lab | 10 |
|  | 4/16 | lab checkout |  |