CHEMISTRY 141 - Spring 2016

Instructor: Sean J. Mo, Ph.D. **Office:** OSB 424 **Phone**: 770-484-4514 **e-mail:** sean.mo@emory.edu

Class Schedule: Tuesday/Thursday – 11:50a – 1:30p **Classroom:** OSB 115 **Lab:** Th/Friday - 2:30 – 5:30p

Office hours: Monday, Tuesday and Wednesday.: 3:00 – 4:30p

Text and Materials:

Class:

- *Chemistry,* 12th ed. by Chang, McGraw-Hill 2016 (Required), student study guide and solution manual (Optional)
- A *non-programmable* scientific calculator that can handle power-of-ten scientific notation for numbers (Required)
- An open mind, willingness to learn, and dedication. (Definitely Required)

Lab:

- Laboratory manual, sold by the Chemistry Department
- Carbon-copy lab notebook, sold at the Oxford Bookstore
- Approved safety glasses

} You must have all three items for lab before your first lab.

Course Description: In this course, you will explore introductory topics in chemistry. The course is designed to be a gateway course for the sciences: chemistry, biochemistry, biology, NBB, physics and etc. The topics covered in this class will range from the scientific method, significant figures, the concept of mole, the structure of the atom, ionic and molecular compounds, stoichiometry, reactions in aqueous solutions, molarity, gases, thermochemistry, quantum theory and the electromagnetic radiation, the periodic table, molecular geometry, chemical bonding and other key topics.*

In order to connect the individual topics to how we experience them in the real world, selected real world applications of chemistry in the field of medicine, environment and food will be utilized throughout the course. This interdisciplinary exploration approach will assist with applications of individual chemistry topics to tangible examples and case studies.

Learning Outcomes: At the conclusion of this course, the students will have gained expertise in both quantitative and qualitative problem solving skills. Also, the students will be able to ask critical questions related to the real world issues related to the field of medicine, environment and food. Furthermore, the laboratory component of the course will give the students the necessary hands-on skills to master the chemistry applications related to aforementioned topics.

* Comprehensive topics list is available on Canvas.

Class: This class will utilize lecture, discussion, group work and laboratory experiences to enhance the students understanding of the materials covered. In this course, when needed, additional lecture materials will be posted on the class Canvas site, or handed out in class. The purpose of posting the lectures and handing out the crucial lecture material is to allow you to listen to the lecture and class discussion. It is not to allow you to skip class and assume that you can learn everything from the posted lectures. As you will see, everything that we do in class is not posted on the web.

Assignments: Problems will be assigned in class. Selected assignments will be collected and graded. Even if an assignment is not graded, you will be required to bring solved problems and participate in the class discussion. Furthermore, it will be beneficial for you to work through as many problems as possible to master the topics. As the old adage goes, "practice makes perfect." Personally, I prefer, "*le hasard ne favorise que les esprits prepares*" by Louis Pasteur.

Laboratory: Laboratory attendance is **mandatory**. Make-up labs are not provided.** First missed lab will result in a zero point for the experiment. The second missed lab results in a drop of your *overall* course grade by a full letter grade. At your first lab meeting, the lab procedure will be explained to you. **Exemptions are provided for medical, religious, and special reasons.

Participation: Prompt attendance is expected at every class meeting. Your participation grade will be largely based on your attendance and group discussion/problem solving.

** Please do not use your mobile/smart phone during class. Texting or using apps on your phone will be disruptive not only to your learning, but also to those that are around you. If you are caught using the phone for the first time, you will be given **a warning**. If you are again caught using the phone, your grade will be deducted 2 points per citation starting on your **second offense**.

Proper Behavior in Class: Class is a learning environment; expected behavior includes:

- Coming to class on time and being attentive in class.
- Participating in class.
- Not going in and out of class (unless you're sick) – please get a drink or use the restroom before or after class.
- Not eating or drinking in class. Water bottles are acceptable.
- Not working on material for another class.
- Not bringing a laptop computer to class. If there is a reason you need a computer to assist you in class, make arrangements with me.
- Bringing your textbook and all handouts to each class.

Not respecting the learning environment in class can affect your grade and future recommendations.

Attendance:

- Students are expected to attend all class meetings. However emergencies can arise which may result in absence from class. It would be a good idea to notify me if an absence is due to illness or other emergency. You are responsible for all material covered if absent.

- You are allowed three (3) absences in class. If you exceed the 3 absence limit for any reason, by any combination of absences or tardies, you will:

  (a) Lose 1% of your total grade for the next 2 absences (numbers 4 and 5);
  (b) Lose 2% points for each additional absence (numbers 6 and up).

These points will be deducted from the final average. Note that there are **no** "excused" absences.

- Besides missing class, these also count as an absence:

  1. Being late to class TWICE. (This means coming in after I've finished checking the class roster.) If you come in late, it is your responsibility to see me immediately after class to ensure that you are marked as being tardy and not absent. No adjustments will be made at a later time.
  2. Coming to class more than 15 minutes late
  3. Leaving class early
  4. Going in and out of class
  5. Being inattentive in class or working on other assignments in class

Exams: There will be five (5) 50-minute exams throughout the semester. There will NOT be make-up exams regardless of the reason an exam was missed. If you miss an exam and present me with an acceptable excuse, the grade on the final exam will count in place of the missed exam grade. You must notify me by the day and starting time of the exam that you will not be present and you must give me the reason for the absence. If the excuse is not considered acceptable, the missed exam grade will be a zero.

In general, illness or an emergency situation is the only acceptable excuses for missing an exam. If you are going to miss an exam for a religious holiday or for a school-related activity, you must make arrangements to take the exam early. Missing an exam also counts as an absence in the course. The grade on the final exam can only replace one missed exam due to illness or emergency; additional missed exams will receive a grade of zero.

Anticipated Exam Schedule:*

Exam #1	January 26th, 2016 - Tuesday
Exam #2	February 16th, 2016 - Tuesday
Exam #3	March 3rd, 2016 – Thursday
Exam #4	March 29th, 2016 – Tuesday
Exam #5	April 14th, 2016 – Thursday

*Exam dates are subject to change. The contents to be covered in each exam will be announced in class.

Final Exam: The final exam will be on May 4th, 2016 (Wednesday) from 2:00 – 5:00pm (Section 11J). The final examination is mandatory and will be *comprehensive*. The contents of the final examination will be announced in class. The final examination will not be returned; however, you are welcomed to view your grade in the following semester.

Schedule:

Ch. 1: sections 1 – 10	Ch. 6: Sections 1 – 7
Ch. 2: sections 1 – 7	Ch. 7: Sections 1 – 7
Ch. 3: sections 1 – 10	Ch. 8: sections 1 – 9
Ch. 4: sections 5, 7, 1 – 4	Ch. 9: sections 1 – 5
Ch. 5: sections 1 – 8	Ch. 10: sections 1 – 5

Note that this schedule is subject to change. The sections covered for each exam will be announced in class.

Grading:

Items	Points	Date	Materials Covered
• Exam 1	100	Jan. 26th, 2016 (Tues.) 11:50-12:40p	Exam Topics 1 (Ch.1 - 2)
• Exam 2	100	Feb. 16th, 2016 (Tues.) 11:50-12:40p	Exam Topics 2 (Ch.3 - 4)
• Exam 3	100	March 3rd, 2016 (Thur.) 11:50-12:40p	Exam Topics 3 (Ch.5 - 6)
• Exam 4	100	March 29th, 2016 (Tues.) 11:50-12:40p	Exam Topics 4 (Ch.7 - 8)
• Exam 5	100	April. 14th, 2016 (Thur.) 11:50-12:40p	Exam Topics 5 (Ch.9 - 10)
• Final Exam*	200	May 4th, 2016 (Wed.): 2:00-5:00p	Final Exam Topics (All Chapters)
• Participation	100	based on attendance, individual and group assignments, and homework	
• Lab	200	From CHEM141L	
Total Points:	1,000		

* Your final exam grade may be used to replace your lowest exam grade with the following exceptions: 1) If you have a zero on an exam due to missing the exam without a valid excuse no grade may be replaced, including the zero. 2) If you missed an exam with an accepted excuse only the grade for the excused exam may be replaced.

Lab Grade will be computed as follows:

• Lab Notebook Sheets	100
• Lab Quizzes	100
Total Points:	200

Lab notebook sheets are due at the **end of each lab session**.
Lab quizzes are administered during **the following lab session.**

Course Grading Scale

A: 100.0-93.0%	B+: 89.9-87.0%	C+: 79.9-77.0%	D+: 69.9-67.0%
A-: 92.9-90.0%	B: 86.9-83.0%	C: 76.9-73.0%	D: 66.9-60.0%
	B-: 82.9-80.0%	C-: 72.9-70.0%	F: below 60.0%

*NOTE: Your lab grade will be added to your lecture class scores (including the final) to determine your grade for CHEM141. **Your exam average <u>AND</u> your lab average must both be passing (60.0% or higher) or you will receive a grade of F in the course regardless of your final numerical average.**

Feedback

<u>Feedback is given in a variety of ways – dependent on the type of assignment. Below is the key for feedback given on quizzes/exams/lab reports.</u>

CALC – calculation error
CNPT – inadequate understanding of concept
CVSN – problems with conversion factor
FMLA – incorrect formula or wrong use of formula
SF / U – problems with significant figures and/or units

For formal reports, feedback is given in the form of a grading rubric, which provides details on the grading of each area assessed.

Error in Grading: If there appears to be an error in grading, submit your request for reconsideration in *writing* via e-mail within **48 hours** after the exam/quiz/homework is returned. Note: when you submit your graded item for a review, all of your work on the exam/quiz/homework will be reviewed and re-graded.

SI Sessions: Regular SI sessions will be held by our class SI. Time and meeting location will be announced in class.

Review Sessions: Regular review sessions run by the SI and/or instructor will be scheduled prior to the exams. It is recommended that students who are having difficulty in class to see the instructor during the office hours for additional help.

Canvas: Canvas will be the primary means of communication outside of class. It will also contain supplementary course resources.

Available Resources:

- **Need help?** – please stop by during the office hours at the first sign of trouble. Tutors are also available to help you.

Student work submitted as part of this course may be reviewed by Oxford College and Emory College faculty and staff for the purposes of improving instruction and enhancing Emory education.

Honor Code:
It is assumed that all Oxford College students will adhere to the highest standards of academic honesty and will uphold the Oxford College Honor Code.

On exams, you may not use any material not distributed with the exam itself except for your own calculator and pencils/pens. You may not have any other material with you – this includes books, notebooks, book bags, papers, etc.; they must be left at the front of the room. You may not have a cell phone or other electronic device with you; if you bring these, they must be left at the front of the room also (and must be turned off). During an examination, you may not give or receive assistance.

On assignments for outside class, the work is to be your work alone – you may not give or receive any assistance, and you may use only materials authorized.

Since absences and tardies can affect your grade, giving false information regarding absences or tardies is a violation of the Honor Code. Note also that the Oxford College Honor Code expects students to report any violations of the Code they know of. See the Honor Code Pledge handout for more information.

CHEMISTRY 141 Dr. Mo's class

HONOR CODE PLEDGE

The Oxford College Honor Code applies to Chemistry 141. You should be familiar with the Honor Code. Some specific applications in this course include, but are not limited to:

1. On an exam, you may not give or receive assistance. Other than your own calculator and pen or pencil, you may use only the materials and data provided with the exam. You may not have any other material with you – this includes books, notebooks, book bags, papers, etc. Anything you bring with you must be left at the front of the room. You may not have a cell phone or other electronic device with you; if you bring these, they must be left at the front of the room also (and must be turned off). Your calculator must be an acceptable one (see the syllabus); a cell phone may not be used as a calculator.

2. You may not receive information about an exam from a student who has taken the exam and you may not give information about an exam to a student who has not taken the exam.

3. Since absences can affect your course grade, giving false information about absences and tardies is a violation of the Honor Code.

You should be aware that as the instructor, I am obligated to report any suspected Honor Code violations to the Honor Council for investigation. Should you be found guilty of violating the Honor Code by the Honor Council, you should be aware that the usual penalty is an F in the course.

"I have read the Honor Code of Oxford College and the above statements as to how the Honor Code applies for this course. I understand them and I agree to abide by them."

Name _____ Signed _____

(print name)

Date _____

Laboratory Schedule:

All laboratory sessions are scheduled from 2:30-5:30pm on Thursdays/Fridays. All sessions will fully utilize **3-hours** as listed in the schedule. Please consult with the instructor if you *cannot* meet the attendance requirement.

Week	Expt. No.	Date	Experiment Description
1	-	Jan. 11 – 15	** No lab!! ** ☺
2	0	Jan. 18 – 22	Introduction + Safety video + Safety Quiz
3	1	Jan. 25 – 29	Expt. 1: Precision of Laboratory Glassware
4	2	Feb. 1 – 5	Expt. 2: Composition of An Alloy
5	3	Feb. 8 – 12	Expt. 3: Chemical Properties
6	4	Feb. 15 – 19	Expt. 4: Chemical Reaction Stoichiometry
7	5	Feb. 22 – 26	Expt. 5: Ionic Compounds
8	6	Feb. 29 – Mar. 4	Expt. 6: Gas Laws
9	-	Mar. 7 – 11	** No lab – Spring Break!! ** ☺
10	7	Mar. 14 – 18	Expt. 7: Calorimetry
11	8	Mar. 21 – 25	Expt. 8: Titration I – Standardization of Sodium Hydroxide
12	9	Mar. 28 – Apr. 1	Expt. 9: Titration II – Vitamin C
13	--	Apr. 4 – 8	Expt. 10: Atomic Spectroscopy + Practice Session I
14	--	Apr. 11 – 15	Practice Session II
15	11	Apr. 18 – 22	** LaboratoryWrap Up ** ☺

A primary focus of laboratory exercises is safety. Do not wear shorts, sandals, or loose clothing. You must always wear safety glasses while in lab. Lab will typically be carried out individually or in groups of two students. Do exercise care in picking a lab partner that you can work well with and be productive around. I will intervene and assign lab partners if I think a group is not performing in an efficient manner.

Listed below are a few details that pertain to lab reports and the lab notebook.

- A carbon-copy laboratory notebook provides a place for the recording of your work taking place in the experiments. It should contain a brief purpose statement for the experiment, pertinent equations and literature values needed, experimental modifications and observations, organized data tables for recording experimental results, and complete calculations showing the reported results. Lastly, include any needed error analysis or a few statements as to the estimated error for a given experiment. The laboratory notebooks will be graded, so be sure to maintain them properly.

- A carbon-copy sheet is considered late if it is not submitted immediately after the end of lab session. Late submission will docked 25% per day. Any assignment turned in 3 days after the due date will receive zero (0) for the grade.

- A lab notebook calculation sheet is considered late if it is not turned in by 5:00pm on Monday. Late submission will be docked 25% per day. Any assignment turned in 3 days after the due date will receive zero (0) for the grade.