Foundations of Chemistry (Lecture)
CHE 112 - 3001
Syllabus, Fall 2019
MW 11-11:50 am, room N055

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00-9:50 am</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:00-10:50 am</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00-11:50 am</td>
<td>CHE112 Foundations of Chemistry - Lecture (N055)</td>
<td>CHE145 Laboratory (N232)</td>
<td>CHE112 Foundations of Chemistry - Lecture (N055)</td>
<td>OFF CAMPUS</td>
<td></td>
</tr>
<tr>
<td>12:00-12:50 pm</td>
<td>Office</td>
<td>Office</td>
<td>Office (or lab prep., N240)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:00-1:50 pm</td>
<td>Office</td>
<td>Office</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:00-4:50 pm</td>
<td>CHE145 Laboratory (N232)</td>
<td>CHE145 Laboratory (N232)</td>
<td></td>
<td></td>
<td>CHE351 Organic Laboratory (N240)</td>
</tr>
</tbody>
</table>

OFFICE HOURS
In addition to the office hours indicated above, you may see me by appointment. I encourage you to help me get to know you better. Office hours are very good for specific problems that you may encounter during your studies.

TEXTBOOK and COURSE MATERIALS

Scientific calculator: Your calculator should be able to handle scientific (exponential) notation and logarithms. If you don't already own one, you can easily find decent models for less than $20. A graphing calculator would also be acceptable. No matter which calculator you choose, be sure to familiarize yourself with how to use it properly and ask for help if needed. Be sure to bring your calculator to class every day. The use of calculators with wireless connections, phones, or computers is prohibited during in-class quizzes or exams.

COURSE DESCRIPTION
CHE112 is a one-semester course designed to prepare students with limited chemistry backgrounds for success in CHE125, the CHE 145/155 sequence, or CHE165. Through lectures (and discussions within), this course emphasizes fundamental chemical concepts, chemical nomenclature, and problem-solving skills.

Course Objectives
The primary goal of CHE112 is to provide students with an understanding of the fundamental concepts of chemistry and to develop problem solving skills that will enable them to progress to other advanced chemistry courses with the anticipation of success. A secondary goal is to provide chemical knowledge and skills applicable to related natural sciences (e.g. biological sciences, health sciences, medicine, environmental sciences, geology, physics) in which an understanding of the composition of matter and its natural transformations is essential.

Both goals require development of the ability to think scientifically and to employ a thoughtful and logical approach to problem solving. The student will learn the language, concepts, models, and computational skills required to understand and solve chemical problems.
**Expected Course Outcomes**
Students who achieve a passing grade or better will have demonstrated
- correct use of the scientific languages of chemistry,
- accurate written descriptions and applications of the concepts and models used in chemistry, and
- competence in the computations and problem-solving skills used in chemistry, as measured by scores on homework assignments, quizzes, progressive exams, and a comprehensive final examination.

**METHODS OF INSTRUCTION**
The lecture will cover new course content assisted by projected PowerPoint files, whiteboard notes, demonstrations, in-class activities (such as practice questions and problems), review of homework assignments, quizzes, and progressive exams.

PowerPoint files of the lectures will be posted on the course CANVAS website shortly before each lecture. There won't be a formal grade for just "showing up", but **it is still expected that you will attend all scheduled lecture sessions and show up on time**. Don't rely only on the PowerPoint slides, and don't be afraid to ask questions when you have them. (If you have a question, there's an excellent chance that more students in the class are wondering about the same thing!)

**EVALUATION POLICY**
There will be (nearly) weekly **quizzes and homework assignments**. Some will be online (CANVAS) and some will be handed in or completed in-class. These will typically contain problems from the text. Most chapters will be covered within three class periods. Homework and quiz due dates will be within 1 week of the chapter’s completion in lecture. Some quizzes may assess your advance reading of the lecture material; notice will be given at least 1 class period in advance. Quizzes and examinations will be similar in content to the homework.

There will be **three one-hour examinations** and one cumulative **final examination**. Each progressive exam will cover two or three text chapters. The final comprehensive exam covers all topics from lecture throughout the semester. It counts for 20% of the course grade. It will be held in Room N055 from 7:30-9:30 am on Friday, December 20.

The specific number of assignments may vary (e.g., there may be more homework assignments than quizzes, or not one per chapter) but the percentages assigned to grade categories are set. Scores will likely be adjusted before assignment of the final grade. The grading scale below is a minimum required to guarantee the stated grade (i.e., scores will not be adjusted below the earned levels).

**Tentative Examination Dates**

<table>
<thead>
<tr>
<th>Date</th>
<th>Examination</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/25</td>
<td>Examination # 1 – Chapters 1, 2, 3</td>
</tr>
<tr>
<td>10/23</td>
<td>Examination # 2 – Chapters 4, 5</td>
</tr>
<tr>
<td>11/20</td>
<td>Examination # 3 – Chapters 6, 7</td>
</tr>
<tr>
<td>12/11</td>
<td>Examination # 4 – Chapters 8, 9</td>
</tr>
<tr>
<td>12/20 (7:30 – 9:30am)</td>
<td>Final - Cumulative; Chapters 1-9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Homework</th>
<th>25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>Exams (4x10% each)</td>
<td>40%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>95-100%</td>
</tr>
<tr>
<td>A-</td>
<td>90-94%</td>
</tr>
<tr>
<td>B+</td>
<td>87-89%</td>
</tr>
<tr>
<td>B</td>
<td>84-86%</td>
</tr>
<tr>
<td>B-</td>
<td>80-83%</td>
</tr>
<tr>
<td>C+</td>
<td>77-79%</td>
</tr>
<tr>
<td>C</td>
<td>74-76%</td>
</tr>
<tr>
<td>C-</td>
<td>70-73%</td>
</tr>
<tr>
<td>D</td>
<td>60-69%</td>
</tr>
<tr>
<td>F</td>
<td>Below 60%</td>
</tr>
</tbody>
</table>
COMMUNICATION
It is expected that you will have regular access to an internet-connected computer and printing resources. If you
don't have access to these resources at home, be sure to familiarize yourself with the hours of the campus's
computer center and library.

E-mail: A UWM email address is required for the course. Please activate your account today if you have not.
Please include in the Subject: CHE112 - Topic of your letter. Let me know in advance of any known
scheduling conflicts. Conversely, if I need to cancel class or change the schedule in a way that might affect your
use of time, I will send an email to your UWM inbox. Check it at least once a day.

CANVAS Account:
Relevant materials and assignment grades will be posted on the companion CANVAS Course Site
(https://uwm.edu/canvas/). I will be continually updating the website with handouts, practice problems, course
announcements, and other information - such as what we will be discussing in class and what you should be
reading and studying each day. I will demonstrate some of these features in class.

COURSE MATERIAL
We will discuss material from the textbook and largely follow the order presented therein, with an emphasis on
the first nine chapters. This allows for roughly 3 days per chapter, though some chapters will require more
discussion in class than others. This course will cover the following topics

1. Measurements, conversions, and significant figures
2. Dimensional analysis and its use in chemistry
3. Language of chemistry
4. Basic concepts of chemistry
5. States of matter and types of state changes
6. Ionic and molecular compounds
7. Naming rules for inorganic compounds and binary molecular compounds
8. Mole concept
9. Stoichiometry basics
10. Study skills necessary to success in introductory, general, or engineering chemistry

Time investment
On average, students should expect to spend a minimum of 48 hours per credit per semester on all activities in-
class or outside of a classroom. Approximately twice the time spent in-class should be spent on reading, solving
problems, studying, etc. outside of class. To achieve the learning goals of this course, approximately 96 hours
should be invested between lectures (28 hours scheduled) and time outside of class (68 hours).

CLASSROOM ETIQUETTE
Classes are designed to be periods of active learning, so you are expected to contribute during lecture. Class
attendance and active participation is expected. Generally, treat each other with RESPECT. I'll take you
seriously by paying attention to you throughout this course, and you should be willing to reciprocate.

One specific way of doing this is to reduce distractions. Be on time for class. Refrain from talking to each other
while I (or other students) am speaking or lecturing. However, you are strongly encouraged to contribute to
the discussion in your turn and on topic. Turn off your cell phones and any other device that makes noise. If
you must snack, don't make a lot of noise. Put away any unrelated reading materials that do not pertain to the
course, so that you will not be distracted. Please be aware of the students around you and any distractions you
may be causing. Feel free to call out anyone causing such an obstruction to learning.

Please bring difficulties and complaints to me immediately so that I am aware of them and can address them to
the best of my ability. Do not allow a negative attitude to develop.
Responsibility for Learning
Students are individually responsible for collection, development and use of the materials, information and skills required to succeed. To succeed in, students should

- bring the textbook to class
- make written notes during lecture and discussion
- review the PowerPoint lecture files before and after class
- read the relevant sections of the textbook
- prepare a personal "Study Guide" for each quiz and exam in the course

STUDENTS are responsible for acquisition, assimilation, integration, and application of course content from their reading, handouts, demonstrations, assignments, and tests.

Changes in the syllabus
This syllabus serves as a general outline for the semester. The instructor reserves the right to make adjustments to the course as the need arises, and every effort will be made to announce changes in a timely manner.

IMPORTANT DATES (see: https://uw.edu/onestop/dates-and-deadlines/important-dates-by-term/)
- Add deadline for semester-long courses: Monday, September 16
- Last day to drop a class without a W: Monday, September 30
- Withdrawal deadline for semester-long courses: Sunday, November 10
- Thanksgiving Break: Wednesday, November 27 through Sunday, December 1 (no class Wednesday)
- Last day of Classes: Thursday, December 12

Policy on late or missed assignments and tests
Late work will not be accepted unless extraordinary circumstances exist. Extraordinary circumstances are at the discretion of the instructor. If you have a reasonable commitment, consult your instructor in advance. Missing an assignment, quiz or exam without instructor consent will result in a grade of zero for that task. It is best to avoid scheduling work or appointments for the time you are to be present for this lecture.

Cancellation Policy
Should a scheduled lecture, discussion or lab session be canceled (e.g. for weather), the instructor will make an announcement to the class ahead of time by posting a message on the course CANVAS website, and by sending each student a notification by email, and by posting a notice near the classroom door.

Accessibility Services
If you need accommodations for a cognitive or physical reason, your instructor will accommodate you. Your instructor needs authorization to do this. If you think you may need accommodations, please contact student services or the librarian to determine your eligibility and the type of accommodations available, and to arrange for instructor authorization.

Inclusivity
No form of harassment or discrimination is allowed based on identity, including but not limited to, race, gender, class, age, disability, religion, sexual orientation, immigration status, veteran status, gender identity, nationality, and/or ethnicity. Ideas and beliefs can be challenged in the spirit of academic inquiry, but such challenges must be respectful and civil so that all class members are welcome and empowered to participate in the learning process.

Academic Misconduct
Incidents of academic misconduct shall be handled using UW System rules, Chapter 14. 'Academic misconduct' includes, but is not limited to, the following examples: cheating on an examination; collaborating with others in work to be presented, contrary to the stated rules of the course; submitting a paper or assignment as one’s own work, when a part or all of the paper or assignment is the work of another; tampering with the laboratory experiment or computer program of another student (from UWS 14.03).
Definition of ‘academic misconduct’ can be found in UWS 14.03, available in the college library and online (https://uwm.edu/academicaffairs/facultystaff/policies/academic-misconduct/). IT IS A STUDENT OBLIGATION TO KNOW AND ADHERE TO THE UW SYSTEM CODE OF CONDUCT AND UWS 14. Students must behave with integrity that is consistent with common sense and university policy.

Specifically, for this course, exams are to be taken without the help of others and without the use of externally-produced materials, notes or external devices, except for a **calculator**.

**NO SMART PHONES DURING EXAMS.**

Electronic communication devices are **prohibited** during exams, even for use as a calculator. A student observed with such a device during an exam will score zero for the test and be reported to the Dean.

Homework assignments, in-class work assignments, lab reports *etc.* can be done with the aid of others, including students, tutors, instructors and the aid of any devices, materials, notes and resources.

Note that direct copying of another student’s work is **academic misconduct** and will be dealt with according to Wisconsin state laws that govern the University of Wisconsin System (UWS 14). Sanctions range in severity from reprimand, grade reduction, grade loss, suspension from classes, and possibly expulsion from the UW System.

**University Policies**

In addition to the policies specified above, other Departmental and University policies and procedures apply to this course. Please refer to this link from the Secretary of the University:  [http://uwm.edu/secu/syllabus-links/]