

**CHEM 101-1M Survey of Chemistry Lecture**  
**Maryville University**  
**Syllabus Spring 2010**

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As a Blended Learning or Hybrid course, there are both classroom and online components to instruction. A hybrid course attempts to offer some of the flexibility of an online course with the benefit of meeting with the professor and other students in a classroom learning environment. This method of instruction may not be suitable for all learners, so please contact your advisor or the course instructor if you are unsure this course format meets your instructional needs, particularly if you have any special accessibility needs related to computer skills or ADA issues.

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**Blended Learning Format:** CHM 101-1M is designed specifically to promote active class participation and foster a learning community amongst students through a combination of face-to-face and online sessions. This course has been designed as “blended” or “hybrid,” which means that “seat time” for this course is reduced: six of our class meetings will be in the classroom (or face-to-face, f2f), and the remaining two meeting will take place on the course Web site on D2L. The purpose of a course organized in this fashion is to give the student more flexibility and time for in-depth reading, reflection, and discussion of topics.

**Instructor’s Information:**

**Lecture/Lab:**

**Name:** Dr. Greg Wall

**Email:** [awall1@maryville.edu](mailto:awall1@maryville.edu)

**Phone:** 314-435-6487

**Office Hours - Online:** Thursdays, 8-10pm (Online)

**Lab:**

**Name:** Danielle Krewson

**Email:** [dkrewson@maryville.edu](mailto:dkrewson@maryville.edu)

**Instructor Communication:** The fastest way to get in touch is via email regarding any personal or time-sensitive issues. However, I strongly prefer that any questions related to class material, assignments, etc be post on our course discussion board. This will allow me as well as other students to respond to general comments. It is my intentions to check my email between 9 and 10 pm daily. I will also be checking D2L on Sun, Tues, Thurs and Sat., if not daily. For any issues that require immediate attention, you can leave a message on my home phone at (314)-435-6487. Calls will not be accepted after 9 pm.

## Course Information:

**Credits:** 4

**Prerequisites:** Must be co-registered for laboratory component

**Course Meeting Dates:** 01/17, 01/31, 02/28, 03/14, 04/11, 04/25

**Location:** Reid 2317

**Online Meeting Dates:** 02/14, 03/28

**Pre-Assignment:** Read Chapters 1 & 2, Appendix 2; complete assigned problems as noted on D2L and complete sample online quiz. The graded quiz will be due by 9pm Monday 01/18. **Note:** this will be the ONLY time a quiz will be given after the designated meeting time in order to allow me to demonstrate our course management system during our first class meeting.

## Required Materials:

- **Text Book:** *Chemistry in Context, 6<sup>th</sup> ed., American Chemical Society, McGraw Hill*
- **\*\*\*Required proficiency in Desire2Learn, our course web access site:** D2L will be demonstrated during the first class, including how to post to discussion forum, submit to drop box, and take online quizzes
- **Supplemental resources on text website:** [www.mhhe.com/cic](http://www.mhhe.com/cic)
- **Scientific Calculator:** An inexpensive scientific calculator is required.
- **There may be additional materials required for the lab portion of the course.**

**Course Description:** This introductory course in chemistry is appropriate for those entering the health professions and needing to satisfy General Education requirements. The course includes basic lab work in chemistry.

**Course Objective:** Chem 101 is mainly concerned with the basic skills and conventions for chemistry, with applications to everyday life for students not planning to major in science. This course is primarily designed to make students aware of the impact of chemistry on our society. Some examples of topics covered in this course include: environmental pollution, new ways to generate energy, how medicines are discovered, and the chemical nutrition needed for our bodies and the benefits and potential dangers of generic engineering.

## Core Learning Outcomes:

By the completion of this course students will demonstrate knowledge of major concepts from natural science or technology, including developing and testing of hypotheses, drawing conclusions, and reporting findings through a combination of laboratory and virtual interactive experiences. In addition students will gain an appreciation of chemistry in modern society by learning how to evaluate sources of information in science and technology. The general core objectives of this course include:

1. Understand the fundamental concepts of chemistry
2. Apply units of measurement and use tools to perform routine calculations

3. Compare/contrast characteristics of states of matter
4. Atomic structure, electronic structure, periodic trends, molecular structure, and spectroscopy
5. Analyze chemical reactions by:
  - Being able to describe the different types of chemical reactions
  - balancing chemical equations
  - understanding how atoms bond to one another
  - performing stoichiometric calculations
6. Understand the role of energy in chemical systems
7. Acid/Base chemistry, including the role of solubility
8. Nuclear chemistry, including radiation, kinetics, thermodynamics
9. An introduction to Organic and Biochemistry
10. Be able to apply concepts of chemistry to real world problems
11. Understand the role of chemistry in today's society
12. Discover the theoretical and practical significance of chemistry
13. Learn to apply course material to improve thinking and problem solving skills
14. Develop an appreciation for scientific discovery and technological advances

### **Course Organization: An Overview**

Chemistry 101 is composed of several learning modules, one or two for each week we meet either f2f or on-line, that focus on chemistry concepts and applications within the context of real world problems and situations. Each module extends from the Saturday prior to our class meeting to the following Saturday, with the Discussion forum serving as the "final" day of the module topic. The modules are developed and organized to meet the core learning objectives stated above. Each module consists of the following components:

- Online lecture slides, with accompanying required text readings and online resources
- A weekly module quiz that is due the Saturday before our class meeting
- Face-to-face lecture and discussion or an on-line exercise
- A module on-line assignment that is due the Tuesday following our class meeting
- Weekly discussions, where you will discuss an article, news story, video, etc. within online discussion groups

### **Module Topics:**

- **Week #1 (01/17)**
  - The Air We Breathe
  - Protecting the Ozone Layer
  - **Lab:** Check-in, Safety Lecture; Volume and Density
- **Week #2 (01/31)**
  - Global Warming / Our Changing Climate
  - Creating Useful Energy
  - **Lab:** Types of Chemical Reactions
- **Week #3 (02/14) Online**
  - Amazing Water
  - Acid Rain
  - **Lab:** Use internet sites
- **Week #4 (02/28)**
  - **Midterm Exam**

- **Lab:** Chemical Reactions and Electricity
- **Week #5 (03/14)**
  - Exploiting the Power of the Atom – Nuclear Energy
  - New and Future Energy Sources
  - Polymers and Plastics: Carbon-Based Molecules
  - **Lab:** Polymer Chemistry
- **Week #6 (03/28) Online**
  - Chemistry of Drugs
  - Would You Like Fries With That? / Nutrition From a Chemist's Perspective
  - **Lab:** Use of internet sites
- **Week #7 (04/11)**
  - Designer Babies? / The Role of Genetic Engineering in Society
  - **Lab:** Synthesis of Aspirin
- **Week #8 (04/25)**
  - **Final Exam**
  - **Lab:** Check-out

### **Course Requirements, Policies, and Assistance**

- ***Attendance policy:***

Due to the reduced class meetings in our blended learning format, a one absence policy is strictly enforced. Attendance will be taken at the beginning of each face-to-face session. Attendance and participation are vital in all classes in order to enhance learning. **The maximum allowable numbers of absences (excused or otherwise) for this class is ONE. If a student misses two classes, he/she will receive an "AF" (Attendance Failure). "Being absent" shall be defined as missing 30 minutes or more of any one class. As such, arriving late and/or leaving early may result in an absence. Additionally, failure to participate in either of the scheduled on-line sessions will count as an absence.** Talk to the instructor if you have any questions regarding the attendance policy. Additionally, the course is governed by the policies and procedures of the University as defined in the current Academic catalog.

- ***Lecture***

The lecture component of the course will present the fundamental concepts of chemistry, problem solving techniques, and sample problems. The lecture topics covered are outlined in your lecture schedule. You should bring a calculator to each lecture and participate in class discussions and problem solving sessions. Lecture notes, study aids, and other relevant course materials will be made **available online through our D2L class site at least one week prior to our face-to-face (f2f) or online meeting times.** Please familiarize yourself with our course site.

- ***Reading Assignments***

Readings will coincide with the lecture material. I recommend that you **read the material before class** and takes notes on any questions you may have regarding the material. This will allow you to more easily follow the material presented in lecture and ask questions during lecture or provide topics for

discussion or our D2L discussion board. It will be assumed that you are keeping up with the reading material.

- ***Suggested Problems/Homework***

End-of-chapter problems will be assigned regularly (posted one week prior to lecture) but not graded. They identify important items from the text material that you should know and understand and should be completed prior to lecture. Additionally, there will be 5 homework problems for each chapter that will be completed and submitted for grading through D2L. These will include select end-of-chapter problems and a web exercise. **Homework will be due no later than 9pm on the Tuesday following our in-class or online meetings.** Assignments are Microsoft Word documents that are to be downloaded to the student's computer, the answers entered into the document by the student, and the resulting **completed document are to be posted to the D2L Drop box. E-mailed homework will not be accepted.** There will be a 10% drop in grade for every day late for the first 2 days. Any assignments not received by Thursday will not be graded. The lowest homework score will be dropped. Answer keys will be posted on-line after the assignments have been collected.

Homework assignments will be worth 20 points each will be graded as follows:

- **18-20 points:** All problems are completed with only minor errors.
- **16-17 points:** All problems are attempted, some errors are present.
- **13-15 points:** Problems have been skipped, significant errors are present.
- **11-12 points:** Several problems skipped, little effort is evident,
- **0 points:** Homework copied from another student (both students receive zeros) or homework received late.

- ***Exams***

There will be one **midterm (02/28)** and a **final exam (04/25)** for this course. There will be no makeups.

- ***Quizzes***

You will be responsible for completing an online quiz, assessing your comprehension of the assigned readings, prior to every in-class or online meeting session. Quizzes will be posted Thursdays prior to our meeting dates and must be **completed no later the 9pm on Saturday.** These will be timed quizzes so it is imperative you have read the material before opening the quiz. The lowest quiz grade will be dropped.

- ***Laboratory***

There will be five on-site labs and two online labs for this course. There will be no make-ups for on-site labs. Attendance is mandatory. You will work either individually or with a partner during the lab. You will be assessed based on your participation, the lab report, and pre/post-lab exercises. Pre/post-lab exercises will be posted the Thursday before lab.

- ***Online Discussion***

There will be one or two discussion topics posted for every week we meet. These topics will cover selected reading and/or lecture material. Topics will be posted on Sunday evenings. You must **thoughtfully respond by 9pm Thursday and reply to at least two other student's postings by 9pm**

**Saturday.** You must abide by proper “netiquette” in your postings. Online slang and abbreviations will not be allowed. Constructive criticism of students’ postings is encouraged, but hurtful comments will not be tolerated. There will be a 10% penalty for the first two days late, and no assigned grade given thereafter. The lowest discussion grade will be dropped.

Each discussion will be assigned 15 points, with 10 points assigned to your individual posting and 5 points assigned to your response to other students’ postings. Discussions will be graded as follows:

**Initial posting (worth 10 points):**

- 10 pts.: Argument is accurate and complete, supported by evidence
- 8-9 pts.: Argument is complete, but with some potential misunderstanding
- 6-7 pts.: Argument is incomplete but accurate
- 3-5 pts.: Argument is incomplete and inaccurate
- 1-2 pts.: Argument does not address the topic assigned
- 0 pts. Failure to post argument by the due date

**Interaction with Classmates (worth 5 points):**

- 5 pts. Responded to two or more classmates’ postings with scientific significance relevant to the topic
- 3 pts. Responded to one classmate’s posting with scientific significance relevant to the topic
- 2 pts. Responded to two classmates’ postings without applying scientific significance
- 1 pt. responded to one classmate’s posting without applying scientific significance
- 0 pts. Failure to interact with any other student posting by the due date

• **Online Assignments**

On our scheduled online meeting dates, you will be responsible for completing an on-line assignment. This may include briefly researching a topic, performing a virtual lab exercise, finding an article relevant to lecture, etc. **These assignments will be posted on D2L the prior Thursday and will be due no later than 9pm Monday.**

• **Grading**

Grades will be assigned based on the following scale:

	percent of grade
<b>Midterm Exam</b>	15.0%
<b>Comprehensive Final</b>	20.0%
<b>Online Discussion</b>	10.0 %
<b>Online Quizzes</b>	12.5 %
<b>Online Assignments</b>	7.5 %
<b>Homework</b>	10.0%
<b>Laboratory</b>	25.0%

- A = 90.0 % - 100 %
- B = 80.0 % - 89.9 %
- C = 70.0 % - 79.9 %
- D = 60.0 % - 69.9 %
- F = 0 % - 59.9 %

- **Withdrawal Policy:** A grade of “W” will only be issued if the student initiates and completes the course withdrawal process prior to the deadline.

- **Strategies for Student Success**

Regular and routine use of a computer and an internet connection is fundamental to your participation and success in the online portion of this course. It will be expected that **in addition to** the online assignments, you are **checking D2L at least twice a week** for any course announcements or schedule changes. The availability of an online component in this course adds to the flexibility of working at your own pace outside of classroom meeting times and will also enrich your learning by providing additional class interaction.

- **Hardware, software and skills requirements:**

**Computer hardware**

1. Access to PC or MAC computer: Because computers frequently malfunction, students are *EXPECTED* to be careful to always back up their work and be ready to make use of the university’s computer labs should problems arise with their personal or work computers.
2. Hi-speed (DSL, cable, etc.) Internet connection

**Software to be used/required**

1. Internet browser requirements if different from D2L
2. Software plug-ins, e.g. Adobe Acrobat, Windows Media Viewer, .NET
3. Word-processing, e.g. Microsoft Word 2007

**Required student computer skills**

1. D2L proficiency: You need to know how to use D2L to read assignments, post discussion messages, and drop files in the drop box
  - **Use of D2L, our course management system, will be demonstrated during our first class meeting. There will be practice exercises that will need to be completed to determine proficiency using D2L as this is essential for successful completion of this course.**
  - A D2L users guide will be provided on our course D2L page.
2. Be able to create, send, receive and send Maryville e-mail (including attaching files).
  - **A Maryville email account must be used to prevent any emails from being regarded as SPAM or “junk mail.”**
  - **Apply for your Maryville email/network account by completing the online application found at <http://maryville.edu/it> Click of the form link “Request an Account” on the page header.**
3. You must be able to use a Web browser such as Firefox or Internet Explorer.
4. You must be able to use a standard word processing package such as Word, and be able to save and manage your files.

If any problems should arise regarding your ability to access D2L, immediately contact me and/or the Maryville computer Help Desk ([helpdesk@maryville.edu](mailto:helpdesk@maryville.edu) or 314-529-9506)

- ***At-A-Glance Course Schedule: (Detailed Schedule Attached)***

	<b>Sunday</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>	<b>Saturday</b>
<b>Lecture (outline/notes posted one week prior)</b>	In class or online					Online assignment due by 9 P.M.	
<b>Quiz</b>					Quiz posted		Quiz completed by 9pm
<b>End-of- chapter problems</b>	To be completed for class						
<b>Graded Homework (Posted Sun.)</b>			In D2L drop box by 9pm				
<b>Discussion</b>					Post to Discussion Board by 9pm		Respond to 2 posts by 9pm
<b>Laboratory</b>	In lab				Pre/post- lab exercises posted		

- ***ADA Statement: Academic Accommodations***

Maryville University provides accommodations and support for students with disabilities as defined by the Americans with Disabilities Act. If you have a documented disability and wish to discuss academic accommodations please contact the course instructor and the Director of the Academic Success Center located in the University Library (314-529-6850).

- **Academic Integrity/Personal Conduct**

*Cheating or academic dishonesty of any kind will not be tolerated!* It is expected all students will uphold the highest standards of this academic code. The FIRST offense will result in a grade of zero on the item in question (and will NOT be dropped). The instructor also has the right to give a failing COURSE grade if academic dishonesty is established.

All students are expected to RESPECT themselves, one another, the instructor(s), the room, and the equipment. In turn, the instructor(s) will respect students and their academic needs and progress.

Please SILENCE mobile phones and pagers before entering the lab or classroom.

**The material contained within this syllabus and attached course schedule may be changed at any time by the instructor to meet course or students' instructional needs.**

## CHEMISTRY 101 – COURSE SCHEDULE – Spring 2010

**Prior to our first class meeting:** Read chapters 1-2, complete the suggested problems. There will be a practice quiz posted so you can familiarize yourself with online quizzing before you take the real one. Also please be certain to have a **Maryville email account** (instructions for obtaining one are described on page 5 of this syllabus).

Week	Date	Topic (read prior to class)	Suggested Problems* (completed prior to class)	Online Assignments – Due Dates **
1	January 17	Chap. 1 Chap. 2 Lab 1	6, 9, 15, 21, 29, 46, 50 2, 7, 13, 15, 30, 34, 55	Quiz – January 18 Homework – January 19 Discussion – January 22
2	January 31	Chap. 3 Chap. 4 Lab 2	2, 9, 20, 24, 32, 39, 52 3, 6, 10, 17, 23, 26, 51	Quiz – February 1 Homework – February 2 Discussion – February 6
3	February 14	<b>Online</b> Chap. 5 Chap. 6 Lab 3 Online	1, 4, 11, 19, 34, 47, 56 1, 4, 6, 17, 28, 39, 49, 60	Quiz – February 15 Online Assignment – February 16 Homework – February 16 Discussion – February 20
4	February 28	Review <b>Mid-term</b> Lab 4		
5	March 14	Chap. 7 Chap. 8 Lab 5	4, 6, 9, 12, 29, 35, 38, 46 2, 7, 15, 23, 25, 30 37, 54	Quiz – March 15 Homework – March 16 Discussion – March 20
6	March 28	<b>Online</b> Chap. 9 Chap. 10 Lab 6 Online	1, 5, 14, 18, 28, 42, 51 2, 6, 15, 25, 35, 37, 51	Quiz – March 29 Online Assignment – March 30 Homework – March 30 Discussion – April 3
7	April 11	Chap. 11 Chapter 12 Lab 7	1, 6, 10, 21, 27, 33, 57 2, 6, 16, 17, 32, 34, 54	Quiz – April 12 Homework – April 13 Discussion – April 17
8	April 25	Review <b>Final Exam</b>		

\* Problems will be posted on D2L at least one week prior to class meeting

\*\* All assignments must be received in the D2L drop box, discussion board, or quiz section by 9 pm on the due date. Failure to submit by the due date will result in a 10% penalty each day late for the first two days. Assignments more than 2 days late will not be accepted.