

# General Chemistry 001 Lecture DD Course Syllabus for FS 2010

## CLASS TIMES AND INSTRUCTOR CONTACT INFORMATION

### INSTRUCTOR    **Dr. TERRY BONE**

333 Schrenk Hall, ([tbone@mst.edu](mailto:tbone@mst.edu)), (573) 341-4820

**Office Hours:**    Tu-Th 9-10 am (or by appointment)

**Lectures:**            M-W-F from 11:00 to 11:50am, G-3 Schrenk Hall

**RECITATION T.A.**    **Sections D1 – D8: Nicholas Dudenhoffer** ([npd5gd@mail.mst.edu](mailto:npd5gd@mail.mst.edu)) 335A Schrenk Hall

**Recitations:**        Schrenk Hall 305

**D1:** Tu 8-8:50am    **D2:** Tu 9-9:50am    **D3:** Tu 10-10:50am    **D4:** Tu 11-11:50am  
**D5:** Th 8-8:50am    **D6:** Th 9-9:50am    **D7:** Th 10-10:50am    **D8:** Th 11-11:50am

**Recitation Quizzes:** **Sections D1 - D4:** Tu 2-6 pm    **Sections D5 - D8:** Th 2-6 pm    Schrenk Hall G-34

### LEAD (LEARNING ENHANCEMENT ACROSS DISCIPLINES)

**LEAD Centers**..... 139 Schrenk Hall..... M,W 7 - 9pm ; Tu,Th 3 – 5pm

**LEAD Tutoring**..... TBA [All LEAD schedules will be posted at: [LEAD.mst.edu/assist](http://LEAD.mst.edu/assist) ]

**Chemistry LEAD** is an excellent opportunity to get a good understanding of chemical principles and concepts, prepare homework assignments, and get in contact with your peers (**and also is FREE tutoring**). During LEAD Centers, a peer LEAD student and also a course instructor will be available to help you learn.

### REQUIRED COURSE MATERIALS

**Textbook:**            Nivaldo J. Tro, **Chemistry: A Molecular Approach** 2<sup>nd</sup> Edition with Student Access Kit, ISBN 0321706153  
——— The textbook and a *Mastering General Chemistry* subscription may be acquired separately ———

**Calculator:**            Scientific notation, **required**. **NO equation-solving or graphing calculators**, cell phones, smartphones, personal data assistants (PDAs), laptops, etc. are permitted during testing.

**Clicker:**                *TurningPoint ResponseCard® XR with LCD display* from *Turning Technologies*.  
**ResponseCards® without LCD display will not answer 'fill-in-the-blank' (i.e., most) questions.**  
**You must register your clicker once for EACH SEMESTER AND EACH CLASS on Blackboard.**

**Cellphones:**        Set to a quiet mode or you may be asked to leave the room.

### COURSE INFORMATION

Information is found at [blackboard.mst.edu](http://blackboard.mst.edu), under Course ID: *CHEM001: GENERAL CHEMISTRY (LEC DD) FS2010*

————— **It is important that you visit this webpage regularly!** —————

### DISCUSSION BOARD

Forums will be available on Blackboard for you to ask about or comment on issues related to this course. Threads will be initiated for every homework problem, practice problem set, and administrative issues. Threads can be initiated regarding other issues by you or your peers in the miscellaneous questions forum. **Please participate** in this useful way of communicating and learning.

### WIMBA

A Wimba online classroom called **CHEMISTRY** will be available 6-9pm F & Sa. Please sign in if you are in need of academic assistance.

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## MASTERING CHEMISTRY – ONLINE ASSESMENT SIGNUP

**YOU MUST PURCHASE A SUBSCRIPTION FOR ONLINE HOMEWORK.** The subscription is valid for 2 years, those that have an account with Pearson can enroll using their old account information.

Go to [www.masteringchemistry.com](http://www.masteringchemistry.com) (can also use link posted on Blackboard)

To sign up: Click **New Students**, and follow the on-screen instructions. You will need an **Access Code**, obtained either from the **Student Access Kit** (that was pre-packaged with your textbook), or must be purchased online (need credit/debit card).

**First and Last name and MS&T email address MUST** correspond to the information on file with the University.

The school country is **United States**, the school Zip Code is **65409**, and the school is **MO UNIV OF SCIENCE & TECH.**

**To enroll in the course you need to input the Course ID – MSTCHEM001FS2010** (Ø = zero, not letter 'O')

## ATTENDANCE AND MAKE-UP POLICY

**STUDENTS ARE REQUIRED TO ATTEND ALL LECTURES AND RECITATIONS.** Excused absences are MS&T-sponsored activities, funeral, military duty, court appearance, illness, or emergency. Absences should be **approved in advance**. Assignment deadlines may be extended at the Instructor's discretion. **Clicker questions and reading and recitation quizzes are excluded from make-up policy.** For excused absences, a make-up exam may be provided at the Instructor's discretion.

## ACADEMIC ALERTS

Academic Alerts will be issued for unexcused absences and either unsatisfactory or non-completion of assignments. Academic Alerts will notify students of **NECESSARY ACTIONS** to meet academic requirements. Non compliance makes the student subject to being dropped from the course.

**It is essential that you promptly respond to and take action to correct an academic alert.**

**LACK OF ATTENDANCE OR NOT RESPONDING TO ACADEMIC ALERTS MAKES YOU ELIGIBLE FOR BEING DROPPED FROM THE CLASS.**

## LEARNING/PHYSICAL DISABILITY SUPPORT

Disability Support Services staff ([dss.mst.edu](http://dss.mst.edu), 204 Norwood) can provide students with documentation. After obtaining **documentation listing your needs**, you are strongly encouraged to meet with the instructor **and** TA's as soon as possible (i.e., the first week of class) to have your accommodations arranged.

## EMERGENCY EXITING:

For each course, be familiar with the gress and emergency exiting map, which can be found online at: [registrar.mst.edu/links/egress.html](http://registrar.mst.edu/links/egress.html)

## STUDENT ACADEMIC REGULATIONS

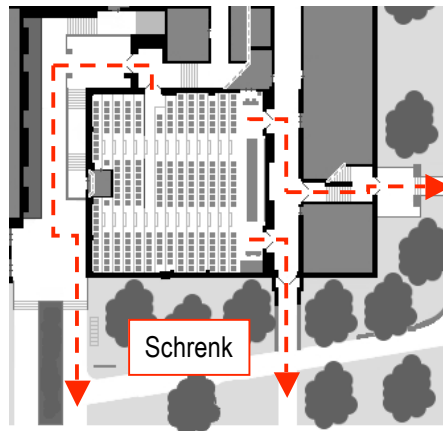
See: ([registrar.mst.edu/documents/academic\\_reg2010-2012.pdf](http://registrar.mst.edu/documents/academic_reg2010-2012.pdf)) Cheating, p.30

**Academic dishonesty or cheating will result in a grade of 0 (zero) for the entire assignment to all students involved.**

**Clickers (Response Devices)** must be used by the user to whom it is registered.

**Submitting another student's ID as your own** will result in being dropped from the course.

**Use of Any Device** to retrieve or transmit information during an assignment is considered cheating and academic dishonesty.



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## TENTATIVE LECTURE AND EXAM SCHEDULE

<u>DATE</u>	<u>CONTENT</u>
8/23	<b>Introduction and Orientation</b> (1 lecture)
8/25	<b>Chapter 1 Matter, Measurement, and Problem Solving</b> (1 lecture, 1 recitation) <i>Learning Objectives:</i> Matter, units, measurement, density, significant digits
8/25	<b>Chapter 2 Atoms and Elements</b> (1 lecture, 1 recitation) <i>Learning Objectives:</i> Atomic structure, isotopes, ions, isoelectronic ions, the moles, mass to moles
8/27-9/8	<b>Chapter 3 Molecules, Compounds, and Chemical Equations</b> (5 lectures, 2 recitations) <i>Learning Objectives:</i> Bonding, chemical formulae, elements vs. compounds, ionic vs. covalent, nomenclature, chemical equations & balancing
9/10	<b>NOMENCLATURE EXAM</b>
9/13-9/29	<b>Chapter 4 Chemical Quantities and Aqueous Reactions</b> (8 lectures, 3 recitations) <i>Learning Objectives:</i> Mass-to-mass conversions, limiting reagent, yields, concentration, molarity, ionic equation, spectator ion, precipitation, acid-base reactions, neutralization, titration, oxidation states, balancing oxidation-reduction reactions
10/1	<b>1<sup>ST</sup> IN-CLASS EXAM</b> Chapters 1 - 4
10/4-10/8	<b>Chapter 5 Gases</b> (3 lectures, 1 recitation) <i>Learning Objectives:</i> Fundamental gas laws, ideal gases, partial pressure, gas stoichiometry, diffusion and effusion, real gases
10/11-10/13	<b>Chapter 6 Thermochemistry</b> (2 lectures, 1 recitation) <i>Learning Objectives:</i> Heat, work, reaction enthalpy, enthalpy of formation, heat capacity, calorimetry
10/15-10/20	<b>Chapter 7 The Quantum Mechanical Model of the Atom</b> (3 lectures, 1 recitation) <i>Learning Objectives:</i> Electromagnetic radiation, atomic spectra, wave-particle duality, electron energy levels, wave functions, quantum numbers, uncertainty principle, orbital shapes
10/22	<b>2<sup>ND</sup> IN-CLASS EXAM</b> Chapters 5 to 7
10/25-10/29	<b>Chapter 8 Periodic Properties of the Elements</b> (3 lectures, 1 recitation) <i>Learning Objectives:</i> Building-up principle, valid quantum configurations, periodic table, atomic radius, ionization energy, electron affinity, electronegativity
11/1-11/8	<b>Chapter 9 Chemical Bonding I: Lewis Theory</b> (4 lectures, 2 recitations) <i>Learning Objectives:</i> Chemical bond types and properties, lattice energy, Lewis structure, resonance, formal charge, octet exceptions
11/10-11/15	<b>Chapter 10 Chemical Bonding II: Shapes, Valence Bond and MO Theory</b> (3 lectures, 2 recitations) <i>Learning Objectives:</i> Electron repulsion (VSEPR), molecular shape, sigma and pi bonds, hybridization, molecular vs bond polarity
11/19	<b>3<sup>RD</sup> IN-CLASS EXAM</b> Chapters 8 to 10
11/29-12/1	<b>Chapter 11 Liquids, Solids, Intermolecular Forces</b> (2 lectures, 1 recitation) <i>Learning Objectives:</i> Intermolecular forces, viscosity, vapor pressure, phase diagram, crystalline vs amorphous, unit cell, packing, crystallography
12/3-12/6	<b>Chapter 12 Solutions</b> (2 lectures, 2 recitations) <i>Learning Objectives:</i> Heat of solution, solubility, colligative properties, units, mole fraction
12/8-12/10	<b>Review, Evaluation</b> (2 lectures) <i>Learning Objectives:</i> Deepen the understanding of chemical concepts and principles
12/17	<b>FINAL EXAM</b> (14 Dec 8 to 10 am) Comprehensive, Chapters 1- 12

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## GRADING AND LEARNING ASSESSMENT

Your current grade will be posted on *Blackboard* under Grades and updated periodically. The grades for Chemistry 001 are determined from a 1000 point system: at least 900 pts = A, 800 pts = B, 700 pts = C, 600 pts = D, and less than 600 pts = F.

**GRADES ARE NOT CURVED FOR THIS CLASS!**

Assignment	Points (Each)	Quantity	Total Points Assessed
Reading Quizzes	1.5	37	50 (max)
"Clicker" Questions	1	~ 140	100 (max)
Homework Assignments	5	39	180 (max)
Recitation Quizzes	20	13	200 (best 10 of 13)
Nomenclature Exam	120	1	120
Mid-semester Exams	100	3	300
Final Exam	250	1	250
<b>Total Grade Points</b>			1000

### **Reading Quizzes**

To prepare for an upcoming lecture you will find a new *textbook reading assignment* posted on Blackboard (under Reading Assignments) after each lecture. Take written notes on the sections you read.

*A 3-minute timed reading quiz will be posted at [www.masteringchemistry.com](http://www.masteringchemistry.com) beginning at noon the day before each lecture. Reading quizzes are worth 1.5 points each (up to a maximum of 50 points). **READING ASSIGNMENT QUIZZES MUST BE COMPLETED ONLINE BY 8 AM ON THE DAY OF THE LECTURE.***

### **"Clicker" Questions**

With the clicker, you RESPOND TO PROBLEMS POSTED DURING LECTURE. Correct answers are worth 1 point each (to a maximum of 100 grade points). Typically the first question is posted within minutes of the start of class. **DON'T FORGET YOUR CLICKER AND DON'T BE LATE FOR CLASS.**

### **Homework Assignments**

At noon on each lecture day, a new assignment will be posted at [www.masteringchemistry.com](http://www.masteringchemistry.com). Each assignment will consist of skill-building practice problems and for-credit problems that are similar to the end-of-chapter problems in the textbook.

**HOMWORK ASSIGNMENTS MUST BE COMPLETED ONLINE.** You will have until precisely 11pm CST on the 3<sup>rd</sup> day after the lecture day assigned to enter your solutions. Your homework solutions are graded automatically. Each completed assignment is worth 5 pts. (HW points maximum of 180 pts).

### **Recitation Quizzes**

There will be a 15-MINUTE QUIZ AFTER RECITATIONS (AVAILABLE 2 TO 6 PM) (worth 20 points each) in Schrenk Hall G-34. The room contains 40 computers and will be seated first-come-first-served. The best 10 of 13 quiz scores count toward your grade.

You will only be allowed to conduct the quiz if you attended your assigned recitation session that morning. Before taking the quiz, you **must swipe your student ID card** at the card reader in Schrenk G-34 **and deposit the ID with the proctoring TA.**

### **Examinations**

There will be a NOMENCLATURE EXAM worth 120 points. All exams will be held during the regular lecture time (9-9:50am) in the lecture room (G-3 Schrenk Hall). The topics of the 3 hourly mid-semester exams are denoted in the schedule above.

The FINAL EXAM is comprehensive over all course material and worth 250 points.

### **Extra Credit**

One-minute papers describing "What I **learned** today in LEAD" will be accepted during LEAD Centers only for 1 point each. Off-topic papers, late papers, illegible papers, or papers without your name or your lecture sections written on them will earn no credit. You must attend a LEAD Center and actively work on chemistry class material for *at least 30 minutes* to be eligible for the extra credit.