Syllabus Chemistry 101 Fall 2002

Sec. 566-577 (TR 11:20) & Sec 579-589 (TR 2:20) Rm. 100 HELD

Professor: Dr. D.T. Magnuson Office: Rm 003B OSC
Telephone: 845-4124 or leave a message at the FYP office: 845-2356
email: magnuson@mail.chem.tamu.edu (PUT CHEM101 IN SUBJECT LINE)

Office Hours: W 3-4PM, Rm 003B OSC &/or call for a time best for you.
I am also available to help students during my lab times: M 11:30-2:30 and W 8 AM - 2:30 PM in rm 407 HELD

Supplemental Instruction Leader:
Instructor Assistant:

Welcome to CHEM 101. As the science that describes matter, chemistry is central to our understanding of many fields from health to the environment to the evaluation of materials. Rapid new developments in very diverse areas virtually guarantee that chemistry will become even more important in the years to come. Knowledge of chemistry will surely be a vital ingredient in your liberal arts education and an essential foundation for your technical education. As educated citizens, it is likely that it will be important for you to be able to understand, interpret, and evaluate information that involves the molecular world. Check with your advisor if you have any doubts concerning the suitability of this course for your degree.

CHEM 101 and 102 are the first-year chemistry sequence in the core curriculum. These are 4-credit courses. The sections in this lecture are a part of a much larger program. Those of us in the First Year Chemistry Program and the Chemistry Department at Texas A&M University are committed to providing a meaningful and stimulating course. Each grouping of sections of this course is independent of the other instructors' sections, but we strive to cover common content, etc.

Required Course Materials:
(2) Nonprogrammable calculator suitable to use on lecture exams.
(4) The lab notebook (8 1/2" x 11"), perforated alternating white and yellow pages.
(5) Approved eye protection. University and Departmental Regulations require that splash-proof, chemical goggles be worn by everyone present any time any experimentation is being conducted or any time chemicals or equipment are being moved by anyone in the laboratory. (The Graduate Chemistry Fraternity will be at the labs the first week of lab to sell suitable goggles). Failure to wear goggles will result in expulsion from the laboratory for the experiment involved.
(6) FOUR standard (8 1/2" x 11") gray scanning sheets (Form No. 0-101607-TAMU) from the bookstore and turn them in unmarked to Room 123 Heldenfels during the Information Desk hours.
(7) “Access Code for entry into OWL (Online Web Learning)” Harcourt College Publishers
(8) One pkg 4" X 6" plain index cards.

Optional Course Materials:
(2) “ChemSkill Builder for Windows-2,” disks 1 & 2, the 3 disk set, or CD, version 5.1 for
Windows, 2000, James D. Spain

(3) Laboratory apron or a nonflammable lab coat. An apron or lab coat will be required in
laboratory if your shorts or skirt do not cover your knees.

**Major Examination Schedule Fall 2002**

<table>
<thead>
<tr>
<th>Date</th>
<th>Major Exam No.1</th>
<th>Date</th>
<th>Major Exam No.2</th>
<th>Date</th>
<th>Major Exam No.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sep 26</td>
<td></td>
<td>Oct 24</td>
<td></td>
<td>Nov 21</td>
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The major exams are designed as 50-60’ exams given during the regular lecture time. Each major exam is
worth 125 points. They consist of 20-25 multiple choice questions. **A photo ID is required** to take
the exam. Each student has an assigned seat. Programmable calculators are not allowed. PC’s, Palm
PC’s, PDA’s, are not allowed in the exam room. **As a courtesy to all, please turn off your cell phones
during class lecture and examinations.** CD players or other listening/recording devices are not
permitted in the lecture/exam room. Please mark your calendars for the above dates, and make the
necessary arrangements to be there.

**Minor Exams:** will be given in class as scheduled in this syllabus. They are Pass/Fail with Pass = 50%.

A minor exam has 6-10 questions, usually short answer and problem solving. It is
designed as a 15-20 minute quiz and will be given during the lecture. A “Pass” gives you
15 points. The minor exam is a warm-up for the major exam and is designed to give you
some idea of where you are in your learning. Minor exams are also included as an
incentive for you to study prior to the “night before” a major exam, and to help motivate
you to attend class. **There are no make-ups for any reason on minor exams.**

**Pop Quizzes:** Pop quizzes may be given. PQs are graded Pass/Fail, passing = 50%. Each pass
counts as 2 points. Pop quizzes consist of 2-4 short answer or short calculation
questions. **There are no make-ups for any reason on Pop Quizzes.**

**Make-up Policy For Major Exams:** There are no make-ups, NONE, except for a university excused
absence. I will be notified by the University in the event of a family emergency. I will be notified by the
University if you are officially representing Texas A&M University and cannot attend the exam. You must
have a Physician’s written statement in the event of your medical emergency or illness. **There are no other
excuses.** Students who have excused absences must notify me within 2 academic days (M, T, W, R, & F).
I require a written statement about the excuse for the absence. I require that you sign-up for the make-up.
After the 2-day sign-up period, the time for the make-up exam will be set from the students’ schedules.
Make-up exams are scheduled within a week of the regular exam. The make-up exams will be at least as
difficult as the regular exams. They are not multiple choice.
Final Exam:  Sec. 566-577: Friday, Dec. 13, (Sorry, not my idea!)  2002, 3-5 PM, RM 100 HELD
           Sec. 579-589: Wednesday, Dec. 18, 2002, 1-3 PM, RM 100 HELD

Do not expect to take the final exam at any time other than its scheduled time, unless you have
made arrangements with me in writing. You must bring a PHOTO I.D. to the Final Exam. **DO
NOT BE LATE;** No one is allowed in the exam room after the first person has left the final. The
Final Exam is comprehensive. It is a 2-hour, 250-point exam covering all the chapters taught
during the semester. The final exam will have 40-50 multiple choice questions.

**Bring to each class:**  Your text, a working calculator, no.2 pencils and eraser,
several 4X6 index cards.

**Bulletin Board:**  Outside of RM 100 HELD

**Graded Exam Pick-up:**  Outside RM 410

**Reading Assignments:** Read chapters scheduled for lecture discussion prior to class.

I cannot emphasize enough how much you are in control of your own learning.

**Lecture Homework Assignments:** Homework problems will be assigned for each topic of study from On-
line Web Learning (OWL). Six (6) sets of homework will be assigned for credit from OWL. Each
set of homework will be worth 10 points, for a total of 60 points for the semester. Homework
**MUST be turned in on time.** Additional details about OWL will be given in class. In addition to
OWL, problems from your textbook will be suggested for each chapter. They are not graded.

<table>
<thead>
<tr>
<th>Percentage of problems correctly completed and turned in on time</th>
<th>&lt;50%</th>
<th>50-59%</th>
<th>60-69%</th>
<th>70-79%</th>
<th>80-89%</th>
<th>=90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number added to your course points</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
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</table>

**Course Grade Calculations:** Your grade will be calculated on a point basis.

**Lecture Points Possible:**

- OWL Homework (6 @ 10pts)        60
- Minor Exams (3 @ 15 pts)        45
- Major Exams (3 @ 125pts)        375
- Final Exam                     250
- POP Quizzes (10 @ 2)            20
- **Total Lecture Points**        **750**
Lab Points Possible:
Lab points will be adjusted so that the lab average of each section will be between 80 and 86%.

Pre-lab & Lab report (8 @ 20 pts) 160
Lab quiz (4 @ 20 pts) 80
Lab Final, written 40
Lab Final, practical 10
CPR (2 @ 20 points each) 40
Total Lab Points 330

This will be adjusted for class average and then multiplied by a factor so that the maximum laboratory points equals 250 (i.e., 25% of total grade)
Total points for the course = lecture points + adjusted laboratory points = 750 + 250 = 1000

Final Grade Cut-Off:
A 1000-900
B 899-800
C 799-600
D 699-500
F less than 500

You can be assured of the letter grade that is indicated if your total points fall in the above ranges. The final grade cut-off may be slightly lowered at the end of the semester. Each semester's ranges are independent of each other.

Lecture Exam Administration:

(A) Check the exam seating assignment on the bulletin board outside Room 100 Held one day in advance. Each exam has a different seating assignment.

(B) Prior to the First Exam, purchase FOUR standard (8 1/2" x 11") gray scanning sheets (Form No. 0-101607-TAMU) from the bookstore and turn them in unmarked to Room 123 HELD during the Information Desk hours: 9:30 - 11:30 am and 1:30 - 4:30 PM Monday through Friday. Samples of the scanning sheet will be displayed on the official Chemistry bulletin in HELD.

(C) Arrive at the exam on time. Cheating or bringing in material with intent to cheat will result in a zero for the exam or a more severe penalty.

(D) Bring to the exam at least two sharpened #2 pencils, an eraser, pencil sharpener, a working calculator (see E below), and a PHOTO I.D. (your TAMU I.D. card or a driver's license will work). There must be NO "sharing" of calculators during an exam. Sharing of calculators will result in a grade of zero for the exam for all involved. Any other items you bring to the exam must be "enclosed" out of sight in a briefcase, pack, purse, or sack, and stored at the front of the room before taking your assigned seat.

(E) Calculators that are programmable or have alphanumeric capabilities are not allowed for the exams. Some of the acceptable and unacceptable calculators are listed on the bulletin board outside Room 100 HELD. Any student attempting to use an unacceptable calculator will receive a zero for the exam plus other penalties.
(F) Follow the directions given to you as you enter the exam room. **Do not write on the envelope or on the back of the scanner sheet. Failure to follow these directions may result in a withheld or zero grade.** In addition, note that the answers have to be recorded on the standard gray scanning sheet to be graded.

(G) During the exam, keep all work covered as much as possible. Talking or looking around the room will result in a withheld grade for the exam.

(H) Work carefully, but you must finish in the allotted time; exams handed in late will not be graded. Please remain seated quietly until asked to leave. Please mark Option A on your scanning sheet if you want your grade posted outside of Room 100 HELD by the last 5 digits of your student I.D. number. You will also be able to see your grades on the World Wide Web. (See Web section below.)

**Review Schedule:**
I will conduct Review Sessions before each exam. See Lecture schedule below for time and place.

**Bulletin Boards:**
Special announcements (schedule changes, etc.) will be posted on the official bulletin boards (Rooms 100 & 413). In addition, solutions to quizzes will be posted for this class in the bulletin board near room ______HELD.

**World Wide Web** ([http://www.chem.tamu.edu/class/fyp/](http://www.chem.tamu.edu/class/fyp/))
Included are details on individual lecture and lab sections, a test bank of selected multiple choice questions for each chapter, and a math review. One special service is the ability to check your grades confidentially on the web. To do so, go to our homepage under the First Year Chemistry Program. Input your password given in class (it is case sensitive) and click on “Look up my grades”.

**Information Office and Help Desk:**
The Information Office is at Room 123 HELD. Office Hours are Monday through Friday, 8:30-12:30 A.M, Monday through Thursday 1:30-4:30 P.M. and Friday 1:30-2:30 P.M. Questions can be answered there pertaining to your course records, homework, etc. This is also where you turn in your scantron sheets, request to have the multiple-choice part of exams hand graded when you believe the posted grade is incorrect, and reserve special exam seating. A Help Desk will also be staffed in Room 123 during about the same hours as the Information Office is open. At Help Desk TA’s are on duty to answer questions concerning lab and lecture. Check outside of Room 123 for the exact schedules.

**Copyright:**
The handouts used in this course are copyrighted. By “handouts,” I mean all materials generated for this class, which include but are not limited to syllabi, quizzes, exams, lab problems or study sheets, in-class materials, review sheets, and additional problem sets, notes, etc. Because these materials are copyrighted, you do not have the right to copy the handouts, unless I expressly grant permission.

**Academic Dishonesty:**
Students are expected to be the sole source for any work submitted in their name. The utilization or submission of work of others is a violation of Texas A&M University scholastic dishonesty policies and disciplinary steps will be taken. Only **authorized** electronic or printed materials or equipment may be used in or near the classroom. As commonly defined, plagiarism consists of passing off as one’s own the ideas, words, writings, etc., which belong to another. In accordance with this
definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you should have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research and knowledge cannot be safely communicated.

Study groups can be a valuable aid to learning. Within the group you should discuss your answers to homework problems. Your group can discuss questions with other groups. Quizzes, exams and the final must be done on your own, unless otherwise specified by the instructor. Academic dishonesty will not be tolerated in any form and will be reported to the proper university officials. Expulsion for academic dishonesty does not look good on one's permanent record and is not worth the points you are trying to gain by cheating. If you have questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, under the section “Scholastic Dishonesty.”

Texas A&M Services for Students with Disabilities: (845-1637):

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, either temporary (e.g. broken arm) or permanent (including a learning disability), please contact the Department of Student Life, Services for Students with disabilities in Rm. 126 of the Koldus Bldg. (Hours: 8 AM to 5:30 PM). If you have any questions, see me.

Important Dates:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>Sept. 5</td>
<td>Last day to drop a course with no record.</td>
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<td>Sept. 6</td>
<td>Beginning of Q drop. Last day to add a class or change sections.</td>
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<tr>
<td>Oct. 18</td>
<td>Midsemester Grades Due in Chemistry Department</td>
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<td>Nov. 8</td>
<td>Last day to Q drop a course.</td>
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<td>Nov. 28-29</td>
<td>Thanksgiving holiday</td>
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<td>Dec. 9</td>
<td>Dead day (No Scheduled Exams) - Re-defined day (go to FRIDAY classes)</td>
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<tr>
<td>Dec. 10</td>
<td>Dead day (No Scheduled Exams) - Re-defined day (go to THURSDAY classes)</td>
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<tr>
<td>Dec. 11-12</td>
<td>Reading Days (No Classes or Scheduled Exams)</td>
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<tr>
<td>Dec. 13</td>
<td>Final Exam for Chemistry 101, Sections 566-577: 3:00 - 5:00 PM., Rm. 100 Held</td>
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<tr>
<td>Dec. 18</td>
<td>Final Exam for Chemistry 101, Sections 579-589: 1:00 - 3:00 PM., Rm. 100 Held</td>
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PLEASE KEEP A RECORD OF YOUR LECTURE POINTS ON THE TABLE BELOW.

<table>
<thead>
<tr>
<th></th>
<th>PQ's</th>
<th>Pts</th>
<th>Minor exams</th>
<th>Pts</th>
<th>Major Exams</th>
<th>Pts</th>
<th>Final Exam</th>
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<td>TOTALS</td>
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Have great semester and good luck and good chemistry to each of you!
Policy on Safety and Breakage

Before working in this laboratory/recitation portion of the course, every student must read the “Laboratory Safety” rules in the laboratory manual plus any Departmental Rules and agree in writing to abide by these rules. It is imperative for your safety that you and everyone around you strictly adhere to the Safety Rules. Failure to comply with the safety regulations (e.g., by not wearing eye protection at all times; by wearing open-toed shoes, short skirts or shorts without also wearing a labcoat or apron; by running an unauthorized experiment; or by removing chemicals or equipment from the lab) may result in dismissal from this portion of the course or deduction of points on your reports. You will be utilizing equipment furnished by the Chemistry Department. It is your responsibility to properly maintain the equipment while it is in your care. If equipment that has been entrusted to you is not returned in satisfactory condition, you will be held responsible for it.

Absences:

The following schedule gives the date that each experiment, quiz, recitation activity, etc. is to be completed. Excused absences must be reported to your lab teaching assistant (TA) in a timely manner with a written excuse. Your lab TA will arrange make-up sessions for those who missed due to a university approved reason. Makeup quizzes will be given the next time you have a scheduled quiz. You can often makeup a missed lab later in the week with another lab section taught by your own lab TA, if there is room in that section. Otherwise, with your TA’s approval, you may attend the makeup lab at the end of the semester in the evening. The date and exact time will be announced later.

Data Sheets:

A data sheet must be submitted at the end of the lab period to receive a grade for that day’s experiment. The data sheet may not be graded in some sections; however, the Report Form for the corresponding experiment will not be graded if the data sheet is not submitted the day the experiment is conducted.

PreLabs and Reports:

For each experiment you will receive a total score between 20 and 0. Prelabs are worth 5 points, and the report form is worth 15 points. The Prelab Exercises associated with each experiment are due before you start the experiment. Report Forms are divided into Data, Analysis, and Postlab Questions. The Report Form must reflect information obtained by you while in the laboratory and recorded on your data sheets. The report form is due the week after the experiment was run. Neatness and completeness may be considered when points are assigned. Points will be deducted for materials not submitted on the date due. Materials more than one week late will not be graded unless you have a university approved excuse.
Lab/Recitation Quizzes and Written Final:
Four lab quizzes (20 points each, usually 3 or 4 points per question) are scheduled at various times during the semester. The quizzes will reflect what you should have gained from previous weeks’ experiments, what you should master before beginning the current week’s experiment, your ability to utilize techniques and concepts, and your understanding of the recitation/lecture topics discussed in lab. The Written Final is 40 points and is comprehensive over all parts of the lab. The Practical Final is 10 points, covering safety and techniques.

CPR:
Calibrated Peer Review (CPR©) is web-based software designed to increase the amount of writing done in our classroom on Chemistry topics. There will be 2 assignments. It is critical that they be done within the time frame allotted due to the nature of the software, because there is no way to handle late work. See attached sheet for more information. Each assignment will be worth 20 points. All times are Pacific Time.

Assignment 1:  Measure and Significant Figures

Part 1 (Write): Mon. 9/9 8AM – Mon. 9/23 8AM
Part 2 (Calibrate & Critique): Mon. 9/23 8AM – Mon. 10/7 8AM

Assignment 2:  Phase Diagrams

Part 1 (Write): Mon. 11/11 8AM - Mon. 11/18 8AM
Part 2 (Calibrate & Critique): Mon. 11/18 8AM - Mon. 12/2 8AM

Grades:
At the end of the semester the scores on all quizzes (4 @ 20 pts), prelabs/ reports,(8 @ 20 pts), CPR (2 @ 20 pts), practical final (10 pts), and written final (40 pts.) will be totaled for each student (330 points possible). The lab points will be adjusted so that the lab average for each section will be between 80 and 86%. This number will be multiplied by a factor so that the maximum lab points will be 230.
## 101 LAB SCHEDULE:
The following schedule is tentative and may differ from that for other instructors. **YOU ARE RESPONSIBLE FOR THIS SCHEDULE AND ANY CHANGES THAT ARE ANNOUNCED.**

<table>
<thead>
<tr>
<th>Week of:</th>
<th>Tentative Problem Solving Session</th>
<th>Prelab Due</th>
<th>Laboratory Investigation/ Activity</th>
<th>Quiz</th>
<th>Report Form Due</th>
<th>CPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/9</td>
<td>Introductions, Significant figures, Safety.</td>
<td></td>
<td>Ck in, read and sign safety agreement; Diagnostic math quiz</td>
<td>--</td>
<td>--</td>
<td>Measurement &amp; Sig. Figs BEGIN</td>
</tr>
<tr>
<td>9/16</td>
<td>Writing Chemical Formulas and Compound Stoichiometry (Chapter 2) Equations &amp; Reaction Stoichiometry (Chapter 3)</td>
<td>#2</td>
<td>#2-Cost of a Chemical Product with a partner, leave a copy of your Data Sheet for #2 with the TA BEFORE leaving lab.</td>
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<tr>
<td>9/23</td>
<td>Naming of Salts, Acids, Bases, and Simple Organic Compounds (Chp. 4)</td>
<td>#3</td>
<td>#3-Are Labels Accurate or Precise? -- leave a copy of your Data Sheet Data Sheet for #3 with the TA BEFORE leaving lab.</td>
<td>#2</td>
<td></td>
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</tr>
<tr>
<td>9/30</td>
<td>Review of Solution Preparation and Solution Stoichiometry (Chp. 3, 4)</td>
<td>#5</td>
<td>#5-Reactions of Calcium--leave a copy of your Data Sheet with the TA BEFORE leaving lab.</td>
<td>Quiz #1</td>
<td>#3</td>
<td>FINISH</td>
</tr>
<tr>
<td>10/7</td>
<td>More Reaction Stoichiometry and the Structure of Atoms (Chps. 4 &amp; 5) Chemical Periodicity and Bonding (Chps. 5, 6)</td>
<td>#9</td>
<td>#9-Mass Relationships in Reactions--leave a copy of your Data Sheet with the TA BEFORE leaving lab.</td>
<td>#5</td>
<td></td>
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<tr>
<td>10/14</td>
<td>Molecular Structure and Dot Formulas (Chp. 7) VSEPR Theory: Practice and Application (Chp. 8)</td>
<td></td>
<td>MAKEUP LAB</td>
<td>Quiz #2</td>
<td>#9</td>
<td></td>
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<tr>
<td>10/21</td>
<td></td>
<td>#10</td>
<td>#10-Shapes of Molecules and Ions--leave a copy of your Data Sheet with the TA BEFORE leaving lab.</td>
<td></td>
<td>#10</td>
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</table>
The laboratory manual contains three types of experiments:

1. **Guided inquiry experiments** ask you to use your data to find generalizations. This experiment is designed to be an introduction to the topic before it is discussed in lecture. The emphasis is on using your data.

2. **Open inquiry experiments** require you to design an experiment concerning a topic that you have studied. In an open inquiry lab, ideas are applied in a new setting.

3. **Skill building experiments** are designed to develop laboratory techniques. These experiments may not necessarily provide new content knowledge, but they will teach you “hands on” experience in the laboratory.