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Chemistry 100-201 Introduction to Chemistry Fall 2015

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**CHE 100-201, Introduction to Chemistry
Course Syllabus, Fall 2015**

Instructor: Dr. Steven Mullen
Phone: 351-2285
Email: Through Cobra

Office: L262
Mailbox: L120
Office Hour: Thursday 1:00 to 1:50 pm

Lecture: TR 2:00 to 3:10 pm
Lab: M 2:00 to 3:50 pm

Room P104
Room L125 (when in lab – see schedule)

Welcome to CHE 100 at Parkland College!

CHE 100 is designed for people with little or no high school chemistry, those who had chemistry long ago, and/or those who tried CHE 101 but want a better understanding before taking CHE 101 again. This course will prepare you for continued studies in the sciences as well as help you apply chemical concepts to the world around you. Chemistry impacts your everyday life. I will do my best to help you succeed, but success will require consistent, hard work on your part. It is like learning another language – it needs practice! See the course objectives list for specific topics in the class.

College Mission

The mission of Parkland College is to engage the community in learning.

Course Objectives

Please see the Course Objectives listed in your course packet and on Cobra.

Pre-requisite

MAT 071, MAT 081, MAT 095, or recent high school algebra with a grade of C or higher. This prerequisite is very important.

How to Succeed in CHE 100

Be on time to class, prepare for class ahead of time, read the text, work with your group, do the homework, keep up with the material, take good notes, and **ask questions in class or out** (of me, classmates, or peer tutors D120). If you have any questions or concerns, do not hesitate to contact me. Making mistakes and learning from them *before* the quizzes and final exam is important. An atmosphere of mutual respect between and among the instructor and students is expected in this class.

**Please note that although this is a thirteen-week course,
we will be covering the same material as in a sixteen-week course.**

Required Materials

1. **Text:** *Introductory Chemistry, 5th edition, Custom for Parkland College*, by Nivaldo J. Tro, Pearson, ISBN 1269737619 (Mastering Chemistry access code included). You may also use *Introductory Chemistry, 5th edition*, by Nivaldo J. Tro, ISBN 032191029X, but Mastering Chemistry must be purchased separately. There is also an ebook version. Please bring this text to class daily – we will refer to problems and sections of the book in class.
2. **Course Packet:** This is a packet of POGIL materials that we will be going through during the semester. You must have it for class. Be sure that you have bought the correct packet before you open it. The **Laboratory Manual** is at the back of this course packet. You will probably want to put the course packet and lab manual in binders.
3. **Laboratory Notebook:** A bound laboratory notebook with duplicate sheets is also available in the Parkland College Bookstore. This is where you will record your data in lab.
4. **Safety Goggles:** You must purchase their own laboratory safety goggles, available in the bookstore. If you already have your own, they **MUST** offer complete protection of the side of your eyes. (Look for the markings "Z87" stamped on the goggles.) Lab safety *glasses* are **NOT** acceptable. This is part of your lab participation grade.
5. **Scientific Calculator:** Any simple scientific calculator is sufficient as long as it is capable of scientific notation. A graphing calculator is not necessary and not allowed on quizzes and exams. *You are responsible for understanding how to use your calculator.* Bring your calculator to every class session, including quizzes and exams. You will not be allowed to use graphing calculators on exams or in the testing center.
6. **i>Clicker:** Any model is acceptable, and you can use it in other classes at Parkland or the University of Illinois. There is also the option of using your phone (REEF Polling web site or iPhone app), but if you have problems, I will not wait for you and you will lose points for the day.
7. **Quarter** for the testing center and lab lockers. Winter coats & excess materials are not allowed in lab.

Cobra & Cobra e-mail

Cobra is a great asset. It contains student versions of PowerPoint discussions, pre-quizzes, general information, your grades, and much more. I expect you to check Cobra at least every other day. Please e-mail me only through Cobra.

Time Expectation

For every in class hour you can expect to put at least 2-3 times that into the course outside of class. 4 hours per week in class * 3 = 8-12 hours outside of class per week. This may vary from week to week, concept to concept, and student to student.

Academic Honesty

Anyone found to be cheating or committing plagiarism on an assignment, quiz, lab report or exam will receive a ZERO for that assignment and the incident will be reported. I reserve the right to give a zero for all previous assignments in that category and require an alternate assignment for future assignments in that category. Cheating includes getting or providing answers from or to another student during before, or after an exam, lab, etc., copying answers to assignments from the Internet or other students' assignments (from this or previous semesters) plagiarism and/or improper clicker use. There may be random i>Clicker serial number checks during the semester. If you are found with a clicker other than the one you originally registered, all other previous clicker grades will become zeroes. The complete policy on academic honesty may be found in the Student Policy and Procedures Manual – please review this policy on Parkland's web site.

Quizzes

Quizzes are worth 25 points each, and the lowest score is dropped. They will be given in the Natural Sciences Testing Center (L161) on specified dates and will typically take 20-25 minutes, but there is no time limit on the quizzes other than the hours of the Testing Center. Since you will have two days to take a quiz, no makeup quizzes will be given. Do not delay in taking the quiz. TC hours are 9-4 M-Th and 9-3 Fri. Write neatly. If I cannot find or read it I cannot grade it.

Midterm & Final Exams

The midterm exam is worth 150 points and is given in the Natural Sciences Testing Center (L161). The final exam is worth 200 points and is given in the regular classroom. The final exam will include all the material that is covered in the semester. Every student is required to take the final exam at the scheduled time. **There is no make-up.** You will receive a zero if you miss the final, which would negatively impact your course grade.

Clickers & Attendance

In-class clicker questions are worth 5 points per week, and the lowest week will be dropped. If you forget your clicker, you will lose the points for the day. These points may be assigned at any time during a class period or during the week and may be a review of the previous class period's work or a check on the current class period's progress.

The clicker questions also serve to keep track of attendance. Our mutual goal is your success in this course. Inadequate attendance has been a leading cause of class failure. The attendance policy in this course is in keeping with the policy stated in the Parkland College Catalog: "Regular and prompt attendance is expected at all classes. Regular attendance and consistent study habits are considered necessary for academic success in college. *Faculty members have the prerogative of lowering grades for excessive absence.*"

Mastering Chemistry Homework

Homework assignments are worth 10 points each, and the lowest score is dropped. The problems are graded on a mastery basis - you will receive credit when you complete the problem correctly. You may attempt each problem multiple times, with only small deductions for wrong attempts and hints. After each attempt, the program will let you know if you did the problem correctly or not, and provide hints on how to solve these types of problems. As with any computer program, there may be some glitches. The "Adaptive Learning" assignments serve as compensation for this or as extra credit. Once you have set up your MC account you will be able to access it from any computer with internet access. I recommend working through the MC problems as we cover the corresponding content in class (a few problems every day). The code you will need to be in the correct section is **MULLEN51341**.

Reading Comprehension

Reading comprehension assignments are worth 5 points each, and the lowest score is dropped. Students often complain: "You made us buy the book and we never used it." This is not the case in Chemistry. Since class time is very limited, we will hit the highlights in class, but you will need to supplement your understanding using the textbook. In order to encourage reading for comprehension, you can complete either the reading guide (posted in Cobra) as you read the chapter or a reading comprehension quiz in Cobra. The quiz is graded on accuracy but the reading guide is graded on completion.

Pre-quizzes

Pre-quizzes are worth 5 points each, and the lowest score is dropped. The pre-quizzes are on Cobra and will help your performance on the quizzes by letting you know which areas need more study. They are most valuable if you take them without notes just like the quizzes. You should take the pre-quiz well before the quiz so you have time to study it, but it will be available until 11:59 pm the evening before the quiz opens. You can take the pre-quiz as many times as you like, and the maximum score will be recorded.

Lab participation (including pre-lab & goggles)

Participation in each lab is worth 5 points. To earn full points, dress appropriately (legs and stomach covered, closed toed shoes, and safety goggles), arrive on time, have the lab read and have your pre-lab in your lab notebook before you arrive (procedure and data tables written in lab notebook), work with your group, and clean up after yourself. If you fail to attend the mandatory safety introduction lab you will not be allowed to participate in lab. The laboratory component is very important in Chemistry. **If you miss three labs you will receive an F for the course.** Do not forget your goggles. **You will not be allowed to participate in lab if you do not have your goggles.** This means that you will miss the lab and receive no points for the lab report or lab participation. You may borrow disgusting goggles for a three-point penalty or buy new goggles at the Parkland Bookstore.

Lab Reports

You will be required both to perform laboratory experiments and to write reports. Lab reports are worth 20 points each. Use extra lab time to work with your partner to complete the report. Reports are due on the Monday following lab at the beginning of class. Since the lab supports the classroom concepts, anything in lab could be on a quiz.

Food and Drinks

No food or drinks are allowed in the lab.

Drops and Withdrawals

On census day (8/31), I am required to assess your attendance. If you have not attended regularly to that point, you will be withdrawn with no refund of tuition or fees. After census day, you can be withdrawn at midterm (10/16). I will send you an email notifying you. After midterm, if you want to withdraw from the course, you are responsible for your own withdrawal. You must withdraw before 5:00 pm on the last day to withdraw (12/4). If you quit attending this course or miss three labs and do not withdraw, you will automatically receive an F.

Cell Phones & Pagers

Please be courteous! Parkland's Public Safety is requesting that everyone set their phones to vibrate as part of the new mass notification system, IRIS. Cell phones are not to be used as calculators for quizzes or exams. The safety of your cell phones and pagers is greatly reduced in the lab setting, so leave them in the locker.

Disability Services

If you believe you have a disability for which you may need an academic accommodation (e.g. an alternate testing environment, use of assistive technology or other classroom assistance), please contact: Cathy Robinson, Room U264, 217-353-2082, crobinson@parkland.edu. Note that I will need to see your ID before I can make accommodations.

Material Covered

The following topics will be covered in class, according to the schedule below. Please note that material covered in this class builds upon material covered earlier in the semester.

Chapter	Topic
Chapters 1 & 3	The Chemical World & Matter and Energy
Chapter 4	Atoms and Elements
Chapter 5	Molecules and Compounds
Chapter 2	Measurement and Problem Solving
Chapter 6	Chemical Composition
Chapter 7	Chemical Reactions
Chapter 8	Quantities in Chemical Reactions
Chapters 9 & 10	Electrons in Atoms and the Periodic Table & Chemical Bonding
Chapter 13	Solutions
Chapter 14	Acids and Bases

Week	Monday (110 minutes)	Tuesday (70 minutes)	Thursday (70 minutes)
4	Chapters 1/3	Chapters 1/3	Chapters 1/3
5	Lab	Chapter 4	Chapter 4
6	Chapter 5	Chapter 5	Chapter 5
7	Lab	Chapter 2	Chapter 2
8	Chapter 2	Chapter 2	Chapter 6
9	Lab	Review	Midterm Exam
10	Lab	Chapter 6	Chapter 6
11	Chapter 7	Chapter 7	Chapter 7 & Chapter 8
12	Lab	Chapter 8	Chapter 8
13	Lab	Chapter 8 & Chapters 9/10	Chapters 9/10
14	Chapters 9/10	Chapters 9/10	Thanksgiving - No Class
15	Lab	Chapters 9/10	Chapter 13
16	Lab	Chapter 13 & Chapter 14	Chapter 14

Course Grading

There are no make-ups, and no late work will be accepted. (I may make exceptions in documented extraordinary situations.)

Point Distribution (1000 points total)		
Quizzes and Exams		
200 points	Quizzes	25 points each (highest 8 out of 9)
150 points	Midterm Exam	
200 points	Cumulative Final Exam	
Homework and Class Participation		
60 points	Clicker Points/Lecture Participation	5 points/week (highest 12 out of 13)
40 points	Pre-Quizzes	5 points each (highest 8 out of 9)
90 points	Mastering Chemistry HW	10 points each (highest 9 out of 10)
50 points	Reading Comprehension (Quiz or Guide)	5 points each (highest 10 out of 12)
10 points	Miscellaneous	Practice quiz, MC Intro
Laboratory		
200 points	Lab reports and pre-labs	Mandatory Intro Lab (25 points) Pre-labs (5 points each x 7) Lab reports (20 points each x 7) (Miss three labs in course = F)

Final Grade				
90% or greater	80-89%	70-79%	60-69%	59% or less
A	B	C	D	F
Missing three labs is an automatic F				

Syllabus Addendum

A syllabus addendum, covering Parkland policies and services not specific to this course, is available on Cobra. It is part of this syllabus, and you are responsible for the information.

Changes to the Syllabus

I reserve the right to make changes to this syllabus should I deem it necessary. You will be notified in writing through Cobra.

Lab Schedule and Due Dates

Lab dates and due dates for your assignments are listed below. **Mastering Chemistry and Pre-Quizzes are due at 11:59 pm. All other assignments are due at 2:00 pm. Class ends at 2:45 pm on quiz days.**

Wk	Monday's Date	Monday P104 or L125	Tuesday P104	Wed	Thursday P104	Fri
4	9/14/15		Take-home Syllabus Quiz due MC Intro due		Ch 1 Reading due Ch 3 Reading due	
5	9/21/15	Mandatory Intro Lab	MC Ch 1 & 3 due Ch 4 Reading due	PQ Ch 1 & 3 due	QUIZ Ch 1&3	Q1&3
6	9/28/15	Ch 5 Reading due	MC Ch 4 due	PQ Ch 4 due	QUIZ Ch 4	Q4
7	10/5/15	Lab 2: Ionic & Covalent	MC Ch 5 due Ch 2 Reading due	PQ Ch 5 due	QUIZ Ch 5	Q5
8	10/12/15		MC Ch 2 due	PQ Ch 2 due	QUIZ Ch 2 Ch 6 Reading due	Q2
9	10/19/15	Lab 1: Measurements			MIDTERM EXAM in Testing Center	
10	10/26/15	Lab 3: The Neutralizers				
11	11/2/15	Ch 7 Reading due	MC Ch 6 due	PQ Ch 6 due	QUIZ Ch 6	Q6
12	11/9/15	Lab 4: Reactions	MC Ch 7 due Ch 8 Reading due	PQ Ch 7 due	QUIZ Ch 7	Q7
13	11/16/15	Lab 5: Stoichiometry	MC Ch 8 due Ch 9 Reading due	PQ Ch 8 due	QUIZ Ch 8	Q8
14	11/23/15	Ch 10 Reading due			Thanksgiving	
15	11/30/15	Lab 6: Potato Chip Fat	MC Ch 9 & 10 due	PQ Ch 9 & 10 due	QUIZ Ch 9 & 10 Ch 13 Reading due	Q9&10
16	12/7/15	Lab 7: Titration MC Ch 13 due	Ch 14 Reading due Lab 7 due	PQ Ch 13 due	QUIZ Ch 13 MC Ch 14 due 11:59 pm	Q13
	12/14/15		FINAL EXAM 2:00 in P104			

What is POGIL?

What is process oriented guided inquiry learning (POGIL)?

POGIL is a student-centered instructional approach that simultaneously develops discipline content mastery and key process skills such as critical thinking, effective communication, and teamwork.

A POGIL classroom or laboratory consists of students working in small groups on specially designed guided inquiry materials. These materials supply students with data or information to interpret followed by guiding questions designed to lead them toward formulation of their own valid conclusions-essentially a recapitulation of the scientific method. The instructor serves as facilitator, observing and periodically addressing individual and classroom-wide needs.

POGIL is based on research indicating that (a) *teaching by telling* does not work for most students, (b) students who are part of an interactive community are more likely to be successful, and (c) knowledge is personal; students enjoy themselves more and develop greater ownership over the material when they are given an opportunity to construct their own understanding.

This inquiry-based team environment energizes students and provides instructors with instant and constant feedback about what their students understand *and misunderstand*. Students quickly pick up the message that logical thinking and teamwork are prized above simply getting “the correct answer.” This emphasizes that learning is not a solitary task of memorizing information, but an interactive process of refining one's understanding and developing one's skills.

What makes POGIL different?

Many student-centered instructional techniques can be effective for achieving valuable learning goals in the classroom. POGIL differs from other approaches in two particular ways. The first is the explicit and conscious emphasis on developing essential and purposeful process skills. The second is the use and design of distinctive classroom materials. Three defining characteristics of these materials are as follows:

1. A POGIL activity is designed to be used with self-managed teams that employ the instructor as a facilitator of learning rather than as a source of information.
2. A POGIL activity guides students through an exploration to construct, deepen, refine, and/or integrate understanding of relevant disciplinary content.
3. The application and development of at least one of the targeted process skills is embedded in the structure and/or content of a POGIL activity and is not solely dependent upon the facilitation of the activity in the classroom or laboratory.

What is The POGIL Project?

The POGIL Project is a professional development organization for educators. There are numerous ways for interested educators to take advantage of the project.

- Join a POGIL Regional Network to interact and support other members.
- Attend a one-day workshop or regional meeting.
- Receive support to visit a site currently implementing the POGIL approach.
- Apply for an on-site consultation with a POGIL expert to help you adapt the POGIL approach to your unique institutional setting.
- Use peer-reviewed and classroom-tested POGIL materials in your classroom, laboratory, or recitation session.

To learn more about The POGIL Project or to find an event in your area, please visit www.pogil.org, email pogil@pogil.org, or call The POGIL Project National Office at 717-358-4639.

From *POGIL Workshop Materials* booklet