Course instructor
Dr. Ioana E. Pavel
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Office Hours: Tuesday 5.30 p.m. - 7.00 p.m., Wednesday 8.30 a.m. – 10.00 a.m., Thursday 5.30 p.m.-7.30 p.m. and by appointment.

Laboratory director
Mr. Kirby Underwood
Office: 110 Fawcett Hall; Phone: (937) 775-3012; E-mail: kirby.underwood@wright.edu

Graduate Teaching Assistants (GTAs)
CHM 125-01, 04 Charles Woods, E-mail: woods.36@wright.edu
CHM 125-02, 05 Amber Rumple, E-mail: rumple.5@wright.edu
CHM 125-03 Raghavendhar Kotha, E-mail: kotha.6@wright.edu
CHM 125-07 Edward Kennedy, E-mail: kennedy.39@wright.edu
CHM125-08 Chad Skidmore, E-mail: skidmore.19@wright.edu

Please note: GTAs office hours will soon be posted on Course Studio.

CHM125 students may attend any CHM125 GTA’s office time to also seek assistance with CHM121 concepts and/or problem solving efforts.

Course description and functions
CHM125 is the first quarter General Chemistry laboratory for science and engineering majors. Chemistry is an experimental science. Therefore, theoretical concepts learned during the CHM121 lecture will be emphasized by hands on experience in this laboratory. Upon course completion, students will also improve or develop new skills that will be useful in future endeavors, regardless of their major (e.g., writing, communication, group work and laboratory skills). They will begin to learn how to design new experiments and to solve relatively complex problems from basic principles.
The CHM125 weekly recitation and laboratory meetings are conducted by GTAs. The recitation period will be used to discuss the laboratory experiment of the week and to reinforce lecture topics. Students should be prepared to ask questions on specific problems or areas of difficulty. The course instructor supervises GTA activities, prepares the final exam, collects and adjusts, as necessary, grades from GTAs to determine the final course grades. GTAs have primary responsibility for operation of their sections and are the first contact instructor for all questions regarding this course.
Pre-requisites: CHM 121 - General Chemistry 1

Student learning outcomes and Methods of assessment
a) Knowledge of chemical principles: Students will have working knowledge of chemical principles such as atomic structure, bonding models, chemical structures, basic reactions, and stoichiometry. In addition, an understanding of the value inherent in the periodic table with respect to chemical properties and reactivity will be stressed. Assessed by laboratory assignments, laboratory reports, quizzes, and exams.

b) Application of chemical principles and laboratory skills: An important part of chemistry is experimentation. A theory is good only if it can be verified by experiment. The CHM125 course is designed to complement the CHM121 lectures. Students will learn the methods of chemical experimentation, data
processing, and interpretation. Data analysis will improve students’ mathematical, computer, and literature skills. *Assessed by laboratory assignments, laboratory reports, laboratory performance, and observation.*

c) **Problem solving abilities and abstract thought:** Chemistry is more about problems than solutions. The leaders in the field are working hard to solve problems that do not have answers (yet). In the real world, you have a problem and a lot of data and have to determine the solution on your own. The CHM121 and CHM125 courses will help you develop problem solving skills. The CHM125 textbook gives you the tools to figure out chemistry, but you have to learn how to use those tools to solve specialized problems and to design new experiments. Although the experimental problems you will be solving in CHM125 have known solutions, the process is good practice for the time when there are no solutions. *Assessed by laboratory assignments, laboratory reports, and exams.*

d) **Communication skills and the ability of keeping a scientific notebook:** Discoveries are useless unless they can be communicated to the rest of the world. Students will learn the techniques of oral and written scientific communication while working as a lab group member or writing lab reports, and also during recitation discussions. They will have to follow laboratory procedures and record laboratory observations, which stresses the concept of keeping a scientific journal. *Assessed by examination of laboratory notebook, recitation discussions, and “journal article” reports.*

e) **Group work skills.** Students will learn to work as members of a scientific group by combining their strengths and compensating for each other’s weaknesses. Two Heads are Better than One! Achieving this skill heavily relies on good communication and harmony within the team and individual relationships. Moreover, working in pairs can also be a socially pleasurable activity, which reduces study related stress. *Assessed by laboratory group assignments.*

*Please note:* Students with documented learning disabilities or physical disabilities who will require special accommodations must register with the Office of Disability Services (023 Student Union, phone: 937-775-5680) and should let the instructor know as soon as possible about the accommodations they will need.

**Textbook and Study Aids**


**Supplementary Material:** Course material, additional information, and some announcements will involve the use of the *Course Studio* system, which can be found into the WINGS portal - by *Access My Courses* in the *Academics* window. You can login at [http://wings.wright.edu](http://wings.wright.edu) using your “w......” number. Please check your *Course Studio* account periodically.

**Attendance**

**Recitations and laboratory experiments** will begin on Monday, January 12th, 2009, during the 2nd week of classes. Students should plan to attend all recitations and laboratory experiments.

a) **Tardiness policy:** Punctual attendance in recitation is mandatory. Safety issues are often discussed at the beginning of the recitation period and students may participate in laboratory experiments only after the completion of the preceding recitation. Failing to punctually attend the recitation section may result in a laboratory absence and a reduced grade.

b) **Absence policy:** Laboratory absences for any reason and failing to submit laboratory reports on time may lead to a significantly reduced grade or even failure, and will be penalized accordingly. Students with three laboratory absences will be assigned a grade no greater than D without regard to the total number of points accumulated during the quarter. Students with four or more absences will be assigned a grade of F without regard to the total number of points accumulated during the quarter.

c) **Make-up lab policy:** There will be NO make-ups for missed labs. ONE experiment grade may be prorated based upon your average performance on the experiments if you supply your GTA with a valid,
written, documented reason for your laboratory absence (e.g., a doctor’s note or a document which validates the participation in a WSU sponsored event). Vacation is not a reason for prorating a missed laboratory.

Please note: The above policies apply to laboratory absences for any reason, including late arrival to recitation and absences resulting from university sponsored events. A prorated laboratory experiment grade does not change the “absence” status of a particular laboratory experiment.

Safety

Safety issues will be addressed during the first lab meeting, and beginning with the first laboratory experiment safety goggles and laboratory coats are required. Students need to be dressed appropriately and wear safety goggles at any time while working or visiting labs.

a) Wear clothing such as pants, very long skirt or very long dress, which covers and protects your body from the waist all the way down to and including your ankles (NO shorts or mid-length skirts are allowed).

b) Wear clothing such as shirt, blouse, or lab coat, which covers and protects your chest, belly, sides, back, shoulders and upper arms (NO cutouts or cutoffs, tank tops, tube tops, muscle shirts, etc.).

c) Wear shoes, which cover and protect your feet completely (NO sandals, flip-flops, open-toed shoes, or shoes with open sides or heels).

Please note: Laboratory safety should be a prime concern. Cell phones, pagers and all other electronic devices (e.g., PDAs, ipods, music players, etc.) must be turned off or placed in silent mode at the beginning of any recitation period, laboratory experiment, or test as a courtesy to everyone in the class and to minimize distractions. Exceptions may be made for certified disabilities. Grade penalties beyond the laboratory performance points may be applied by GTAs and course instructor for failing to follow this policy. Severe penalties such as failing the course will be applied for using electronic devices such as laptops for activities unrelated to the course.

Academic Honesty

Academic honesty is absolutely, unquestionably expected. Academic dishonesty, notably plagiarism of work, and cheating on quizzes or exams will result in a zero grade for the work and could lead to failing the course or even expulsion. Please be aware that this includes copying lab partners’ files, tables, and figures. Lab partners must each submit original, independent data analyses and lab reports. You will also be reported to the WSU Office of Judicial Affairs. For a more detailed description of what is meant by “academic dishonesty” please see the student handbook available at http://www.wright.edu/students/handbook/ and the Student’s Guide to Academic Integrity brochure distributed during the first lecture. For a complete copy of the Academic Integrity Policy and the Code of Student Conduct, please refer to the Student Judicial Services Web pages at: http://www.wright.edu/students/judicial/integrity.html and http://www.wright.edu/students/judicial/conduct.html, respectively.

Course grade

a) Laboratory performance: This includes completing all labs safely and with good experimental techniques, keeping a neat and well organized lab notebook, and obtaining reasonably accurate results. Laboratory performance points will be deducted by GTAs or course instructor for failing to follow rules of safety and laboratory operation/housekeeping. All students begin the term with 5 points and deductions may reduce this score to -5 points. As a result of this negative lab performance score of -5 points, students may face additional penalties including removal from course.

b) Quizzes: Announced or unannounced quizzes may be given by GTAs during the recitation period. Please consult with your assigned GTA instructor and his/her syllabus or course instructions for more details on this aspect.

c) Laboratory reports: At the end of each experiment you will be given an assignment that requires you explain the experiment and evaluate/discuss the obtained data, either by writing, graphing, calculating, etc.
A “journal article” Report Checklist and a guide for Writing about Science are available online, on Course Studio, and will also be discussed in class. Points for each laboratory will be awarded only upon submission of a complete laboratory report, and a late penalty will be assessed by GTA. Please consult with your assigned GTA instructor about his/her grading scheme for lab reports and other requirements relative to this aspect. No laboratory reports will be accepted after 10.45 a.m. on Tuesday, March 17th.

d) Final Comprehensive Exam: At the end of the semester, there will be a written exam covering basic laboratory techniques, instrumentation, and concepts/calculations encountered in the laboratory experiments of this course. Additional requirements may be stated during recitation, posted on Course Studio, or announced via e-mail by both the GTA body and the course instructor.

Overall Grade Determination
Final grades will be based on a total of 130 points, distributed as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Available Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Laboratory performance</td>
<td>5</td>
</tr>
<tr>
<td>b) Quizzes</td>
<td>10</td>
</tr>
<tr>
<td>c) Laboratory reports</td>
<td>80</td>
</tr>
<tr>
<td>d) Final Comprehensive Exam</td>
<td>35</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>130</strong></td>
</tr>
</tbody>
</table>

Guaranteed point grade breaks:

- **A** (≥ 117)  
- **B** (≥ 104)  
- **C** (≥ 91)  
- **D** (≥ 78)  
- **F** below 78 points

Grade breaks are based upon point totals (not %).

Please note: The course instructor reserves the right to use subjective evaluation to determine a student’s final grade. Scores assigned by GTAs in CHM125 must be considered tentative until approved by the course instructor. The course instructor may adjust (up or down) individual laboratory section scores if, in the judgment of the instructor, grading by GTA had been too lenient or too harsh.

CHM125, Winter 2009 - Tentative Recitation and Laboratory Experiment Schedule*

<table>
<thead>
<tr>
<th>Week of</th>
<th>Exp. #</th>
<th>Exp. # and Title in Laboratory textbook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 5th</td>
<td></td>
<td>No experiment or recitation meetings are held during the first week of the term.</td>
</tr>
<tr>
<td>Jan. 12th</td>
<td>1</td>
<td>#22 Mass Measurements and Density</td>
</tr>
<tr>
<td>Jan. 19th</td>
<td>2</td>
<td>Martin Luther King Jr. Day, University closed on Monday, January 19th, 2009</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No experiment or recitation meetings are held during this week</td>
</tr>
<tr>
<td>Jan 26th</td>
<td>3</td>
<td>#28 Paper Chromatography</td>
</tr>
<tr>
<td>Feb 2nd</td>
<td>3</td>
<td>#2 Analysis of Hydrated Copper sulfate – Part 1</td>
</tr>
<tr>
<td>Feb. 9th</td>
<td>4</td>
<td>#2 Analysis of Hydrated Copper sulfate – Part 2</td>
</tr>
<tr>
<td>Feb. 16th</td>
<td>5</td>
<td>#45 Types of Reactions</td>
</tr>
<tr>
<td>Feb 23rd</td>
<td>6</td>
<td>#27 Oxidation-Reduction Reactions</td>
</tr>
<tr>
<td>Mar 2nd</td>
<td>7</td>
<td>#39 Spectroscopy and Atomic Spectra</td>
</tr>
<tr>
<td>Mar 9th</td>
<td>#24 Molecular Models: Inorganic Compounds</td>
<td></td>
</tr>
<tr>
<td>Mar 16th</td>
<td>Final Exam on Tuesday, March 17th, 10.45 a.m. -12.45 a.m., in 112 Oelman Hall</td>
<td></td>
</tr>
</tbody>
</table>

*Abbreviation: Exp. – experiment, # - number.