

## Comprehensive Course Syllabus SCI105 Scientific Inquiries-Chemistry

### Course Description:

SI Chemistry is a one-semester course designed to engage the students in foundational concepts in chemistry and to prepare them for advanced study in science. The content explored includes: the periodic table and periodic trends, inorganic nomenclature, writing and balancing equations, bonding, molecular geometry, molecular polarity, intermolecular forces, electron configuration, stoichiometric relationships and their applications, chemical equilibrium, and acids and bases. This content is encountered through a combination of lab-based activities, guided inquiry, group discussion and direct instruction. Each unit of study incorporates real life applications of the topics covered and highlights the connections between biology and chemistry.

### Instructors:

Dr. Joseph Golab B147 907-5684 <a href="mailto:jgolab@imsa.edu">jgolab@imsa.edu</a>	Dr. Laura Kopff B147 907-5901 <a href="mailto:lkopff@imsa.edu">lkopff@imsa.edu</a>	Ms. Nadia Pierrehumbert B150 907-5494 <a href="mailto:npierrehumbert@imsa.edu">npierrehumbert@imsa.edu</a>	Dr. Melissa Tolla B150 907-5689 <a href="mailto:mtolla@imsa.edu">mtolla@imsa.edu</a>
--	---	---	---

### Office hours:

Mod 3 A & C days or by appointment	Mod 7 A-day & 11am-noon I-day or by appointment	1-2PM I-day & Mod 2 C-day or by appointment	Mod 4 B-day & Mod 5 C-day or by appointment
---------------------------------------	--	--	--

*All classes meet in Room B110*

### Course Materials:

Course materials are posted on Moodle for student acquisition.

Calculators and computers are required for calculations and to generate laboratory electronic notebooks.

Students will also need a folder/binder to keep all materials organized.

### Student Learning Objectives:

Unit 1:

- Periodic Trends
- Nomenclature

Unit 2:

- Covalent Compounds
- Bonding and Molecular Geometry
- Molecular Polarity
- Electron Configuration

Unit 3:

- Chemical reactions and their types
- Moles and molar relationships
- Molarity
- Limiting reactants
- Titration

#### Unit 4:

- a. Equilibrium analogies
- b. LeChatelier's Principle including energy
- c. Acid Equilibria
- d. pH and pOH
- e. Strong versus weak acids

#### Student Expectations:

The experience you have in this course will be directly related to your level of participation!! One cannot choose to be a nonparticipant and expect to reap all of the possible benefits. Therefore, we have established some guidelines for you:

1. Please be on time and ready for class - both mentally and physically. Students who are more than 10 minutes late will be given an unexcused absence since we will have already begun the lab/activity/discussion for that day. Refer to the Student Handbook for specific effects of excessive tardies and absences. There will be NO credit awarded for make-up work due to unexcused absences. It is the responsibility of each student to arrange for make-up work due to excused absences (preferably in advance!).
2. Besides being on time, please have all the materials you will need for the class WITH YOU! Our work on many days will require you to have your laptop computer, lab notebook, calculator and pen/pencil. You should also wear close-toed shoes on all class days. Your lab notebook/laptop will be the only materials allowed in the lab in which to record data. Therefore if you forget it, you cannot participate in the laboratory until you get it.
3. Turning work in late is discouraged. When an assignment has been collected, it may be submitted for late credit at a 10% penalty per day. Once the material has been assessed and returned to any of the SI- Chemistry sections, it cannot be submitted for late credit.
4. No iPods, MP3/CD players used, sunglasses worn, cell phones on, or food/drinks ingested in the lab.
5. Collaboration is encouraged throughout all facets of this course. Academic dishonesty, however, is not. (Please review the Academic Integrity Policy in your handbook) It is expected that students will discuss laboratory results, and partners will share common data. It is also expected that all reports/work reflect individual thought. All other sources must be referenced appropriately.
6. If, at any point, you are experiencing some confusion - get help *immediately*. Concepts cannot build upon each other if one is not understood. DO NOT WAIT- attend scheduled help sessions or schedule an appointment with your teacher.

#### Assessment Practices, Procedures, and Processes:

A student's grade in this course reflects all aspects of the course. Laboratory reports are submitted for each experiment that is conducted. Formative and summative quizzes are administered frequently to monitor student learning. Homework is also collected and assessed periodically. Points are earned from laboratory work, problem solving activities and presentations, written assignments and formal assessments. 36% of the semester grade is from laboratory work and reports, homework, mini-projects, and other small assignments; 54% is from quizzes and tests, and 10% of the semester grade is from the final exam, which is administered at the end of the term. An A reflects an average of 90% or greater, a B reflects an average of 80% or greater and a C reflects an average of 70% or greater. Major assessments are administered at the conclusion of each unit, usually every 4 weeks. These include both written and laboratory components

#### Sequence of Topics and Activities: (See Course Calendar)