

INTRODUCTORY CHEMISTRY COURSES (Rev 5/20/2016)

Chemistry 103 & 104 – General Chemistry I (4 credits) & II (5 credits); both courses offered Fall, Spring and Summer semesters

This course sequence is the traditional one-year introductory chemistry sequence for many majors including science, engineering, and biologically-related fields. Chem 103 is the first semester course in a two-semester sequence with Chem 104 continuing concepts where Chem 103 ended.

- **Math Requirement:** College algebra proficiency on UW Math Placement Exam (at least 570 out of 850 on algebra and at least 406 on math basics); or completion of Math 112, Math 114, Math 171 or equivalent.
- **HS Chem:** The vast majority of students have had at least one year of HS Chemistry.
- **Average Math ACT:** 29 (5 year average)

Chemistry 108 – Chemistry in Our World (5 credits; offered Spring semesters only)

This course teaches chemistry through real world topics such as air quality, nuclear medicine, food, and global climate change. This course is primarily intended for students who are non-science majors, and especially welcomes elementary education and business majors, pre-nursing students, and many other majors requiring just one semester of chemistry. This course (like all chemistry courses) counts towards the physical science requirement for graduation.

- **Math Requirement:** There are no math prerequisites for Chem 108.
- **HS Chem:** More than $\frac{4}{5}$ of Chem 108 students have had 1 year of HS Chem.

Chemistry 109 – Advanced General Chemistry (5 credits; offered Fall semesters only)

An accelerated introductory chemistry course recommended for chemistry, biochemistry, and many engineering majors. This course covers the breadth of the material covered in Chem 103/104, skipping the more basic concepts and focusing in depth on the more difficult topics. Students are expected and need to have strong college-level study skills for this course.

- **Math Requirement:** Placement into Math 221 (1st semester calculus) or higher and at least a 27 on the ACT math component.
- **HS Chem:** About 83% of Chem 109 students had 2 or more years of HS Chem often including AP Chemistry. Students with one year of high school chemistry may take Chem 109, but they will need to work harder to perform satisfactorily.
- **Average Math ACT:** 31 (5 year average)

Chemistry 109-3 Honors (5 credits; offered Fall semesters only)

The honors section of Chem 109 provides a modern introduction to chemical principles within the context of current research themes, especially energy and global climate change. Fundamental concepts are applied to issues such as energy production and consumption, as well as their impact on the environment. Students need authorization from the Chemistry Consultant to enroll.

- **Math Requirement:** Placement into Math 221 (1st semester calculus) or higher and a 30 or higher on the ACT math component. Students without Math 221 credit should enroll concurrently.
- **HS Chem:** Two years of HS Chem is required, with the second year being AP Chem.
- **HS Physics:** One year of HS physics is recommended.
- **Average Math ACT:** 32 (5 year average).

Chemistry 115 & 116 (5 credits each; 115 offered Fall only; 116 spring only)

A two semester honors sequence designed for well prepared and highly motivated students with an interest in science or engineering. The sequence satisfies both the general and analytical chemistry requirements for any major on campus. Chem 115 includes quantum theory, molecular structure and bonding, kinetic theory of gases and phase transitions. Chem 116 includes thermodynamics, chemical and physical equilibrium, kinetics and spectroscopy, in addition to a research-based laboratory experience. Course enrollment is by invitation.

- **Math Requirement:** Placement into Math 222 (2nd semester calculus) or higher and a 33 or higher on the ACT Math and ACT composite. First semester calculus proficiency required.
- **HS Chem:** One year of HS chemistry required.
- **HS Physics:** One year of HS physics is recommended.
- **Average Math ACT:** 35 (5 year average)