

2018-2019

**Advanced Chemistry**

**Tuesday 1:00 – 2:30**

**Grade Level: 10 – 12**

**Prerequisite: completion of one year of high school chemistry**

**Teacher: Laura Briggs**

**Student Fee: \$50**

**Class Size: minimum of 2 / maximum of 8**

**Class Overview:** This second-year chemistry course is designed for the student who has completed a year of high school chemistry and desires to learn more. The course includes detailed discussions of stoichiometry (with limiting reactants), thermodynamics, kinetics, acids and bases, redox reactions, solutions, atomic structure, orbital hybridization, molecular orbitals, molecular geometry, chemical equilibrium, and nuclear chemistry. The student also receives an introduction to organic chemistry, focusing on the major functional groups, organic nomenclature, and polymer chemistry. There are 28 hours of laboratory exercises in the course, including the rate of an iodine clock reaction, distillation, chromatography, the common ion effect, measuring pH changes in a buffer, the electrolysis of copper sulfate, polymerization experiments, and the hydrolysis of sucrose.

**Required Text: Advanced Chemistry in Creation – 2<sup>nd</sup> edition (2010), by (Apologia – Dr. Jay L. Wile)**

Students only need to purchase or borrow Wile's two-volume set: the student text and the solutions and tests volume. I saw this combination for under \$90 new.

**Class Time:** During class time we will perform experiments and analyze results, and solve mathematical problems introduced in the book. Students will be expected to maintain a laboratory notebook.

**Tests:** Tests are provided in the curriculum, and should be taken by the student at home. Parents will be expected to proctor tests; the final grade on each will be assigned by the teacher. Tests will be reviewed in class after they are completed. A two-hour midterm and final exam will be scheduled outside of class time in January and May.

**Homework:** There will be weekly homework assignments, which will include reading from the text, doing calculations, and/or other activities to help students learn the material. Students will be expected to complete assigned homework, tests and lab write-ups each week; estimated time per week for students is 6 to 8 hours.

**Grades:** We will record grades and provide semester grade reports to parents based on tests, lab reports, homework, and midterm and final exam scores.

**Class Expectations:** Students will be expected to keep up with the volume of work; those who fall seriously behind may be asked to complete the class on their own because they will be unable to participate adequately in class activities and labs. Chemistry is a challenging science, and students will need to humbly ask for help if they are struggling. Parents and students will need access to email for communication with the teacher.