

General Education Annual Course Assessment Form

Course Number/Title ____ Chemistry 30A __ Introductory Chemistry

GE Area _B1-B3_____

Results reported for AY _F2012-Sp 2013_ # of sections __2 lectures, 14 labs/semester_____

of instructors ____one lecturer; laboratory TAs vary_____

Course Coordinator: __Dr. Edward Chichester, Ph.D._____

E-mail: __edward.chichester@sjsu.edu_____

Department Chair: __Prof. Gilles Muller, Ph.D._____

College: __Science_____

Instructions: Each year, the department will prepare a brief (two page maximum) report that documents the assessment of the course during the year. This report will be **electronically submitted**, by the department chair, to the Office of Undergraduate Studies, with an electronic copy to the home college by September 1 of the following academic year.

Part 1

To be completed by the course coordinator:

- (1) What SLO(s) were assessed for the course during the AY?

Fall 2012 through Spring 2013 SLO #2

- (2) What were the results of the assessment of this course? What were the lessons learned from the assessment?

SLO #2: A specific essay was assigned to each student (4- 6 pages required). Each student had to answer specific questions pertaining to current subjects related to chemistry such as: 1) Recycling of plastics – How can this be done without harming the environment; 2) Pesticides and Herbicides - Which crops are most contaminated with pesticides and herbicides? Would you eat food that has been pesticide/herbicide treated? 3) Water Quality - Discuss wastewater treatment plants, farms and fertilizers, and the problem with phosphate run-off into natural water. Do you use phosphate containing home products and if you do, will you try and find an alternative? 4) Organic vs non-organic foods - Is one better than the other with respect to nutrient values and additives used in the food. 5) Fast Foods - Do fast foods have a negative effect on your health? Discuss profits made by fast-food corporations. 6) Air Quality – What conditions are responsible for air pollution in various locations globally; What legislation has been enacted to correct these problem? 7) Global Warming and greenhouse gases - discuss man-made sources that have contributed to greenhouse gases; What tests are conducted to verify the theory of global warming and its consequences? 8)

Food additives – What are the positive and negative effects of using food additives? How does the Federal Government (FDA) keep us informed about food additives? 9) Drugs – Discuss the abuse of drugs such as heroin, PCP, ecstasy, nicotine, cocaine... Why are some drugs legal and others are not? 10) DNA and Crime Investigation – Discuss DNA fingerprinting. How is it used in crime investigation? Can DNA fingerprinting be used to re-investigate old cases? Give some examples. 11) Nuclear Waste – What are the problems with long-term nuclear waste storage? What international agreements have been made to deal with nuclear waste and nuclear proliferation? How serious is the nuclear situation today?

There are a total of 27 essay topics and they are all chemistry related with many of them energy related. These topics require students to understand their environment and see the role that science plays in the understanding of how we as humans affect our planet. The essay questions also have students try and see various options that can correct some of these problems. These essay topics were chosen so that the students can apply what they have learned in chem. 30A to real world problems. One of my major goals as an instructor, with a general education class in science, is to make the students aware of the complex issues that are not only science related but political and morality related as well.

I have the graders (myself included) keep a tally sheet as to how well the students answered questions that I have them answer. These essays were generally well written with greater than 90% of the papers in the good to excellent range. This demonstrated to me that they did indeed investigate the topic and answered the questions in their own words. Plagiarism was kept to a minimum as the web-site turnitin.com was used. The general instructions for the students include information about the writing lab on campus and I do receive reports from this writing lab concerning the progress of students who have utilized this service. Each paper is carefully graded with comments and the students receive these graded essays near the end of the semester so that my TAs can give them feedback on their writing. Since this occurs at the end of the semester there is no time to re-write these essays. However, in order to follow the progress of the writing competency of the chem. 30A students they are required to write a two page formal report early in the semester covering the topic: Density. The students do receive feedback from the TAs about their writing style. There is a rubric that they have to use when writing the density report. This initial report early in the semester helps with the writing of the essay. There is a substantial improvement with the essays compared to the density report. The average density report is typically in the adequate to good range while the essays are in the good to excellent range. Statistical data is collected every semester so that this comparison may be done accurately.

(2) What modifications to the course, or its assessment activities or schedule, are planned for the upcoming year? (If no modifications are planned, the course coordinator should indicate this.)

For Fall 2013 through Sp 2014 SLO #2 will be addressed. These essays are upgraded so as to stay current with changing times. New topics will be introduced to fit changing political and social topics such as: include a few more topics covering global warming and why it's not covered much in the media. This is the most pressing issue of our time and needs to be discussed in more detail in both the lecture and the essays.

Part 2

To be completed by the department chair (with input from course coordinator as appropriate):

- (3) Are all sections of the course still aligned with the area Goals, Student Learning Objectives (SLOs), Content, Support, and Assessment? If they are not, what actions are planned?

Yes. All sections of this course have consistently and regularly taught by the same principal instructor, Dr. Edward Chichester. Dr. Chichester also serves as the laboratory coordinator for this course, so all laboratory instructors report to him, and teach under his direction.