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Competence in Chemistry (50:160:492)

By Alex J. Roche (Spring 2024)

This course and its information can be found at:
<https://roche.camden.rutgers.edu/competence/>

An Exit Examination for Graduating Seniors.

The objective of the “Competence in Chemistry” course is to make sure you graduate on time, and have learned, retained and can articulate (i.e. communicate intelligently) the essential information that a Chemistry major graduating from Rutgers, Camden should possess.

These include Laboratory, Quantitative and Articulation skills and an “Ethics and Professionalism” component.

This experience consists of **four** distinct parts:

1. A questionnaire or interview determining graduation eligibility and other information. (Completed during January)

This process will (hopefully) confirm that you are on track to graduate with your desired degree at the end of this semester. Any transcript / degree requirement issues that are detected can then be addressed and resolved, providing a clear path to graduation. Completion of this activity will allow you to progress to the next component.

2. A written exam that will focus on quantitative Chemistry skills. (Taken during February)

This includes numerical problems such as conversions, problems related to making and diluting solutions, etc. A more detailed explanation, and a list of typical topics and previous examinations are [HERE](#). You *must pass* the written exam to progress on to the next component. (If you fail the written exam, you can take another exam each week, as necessary, until you pass).

3. Completion of a paper concerning “Ethics and Professionalism”. (Completed during March)

A more detailed explanation is [HERE](#). Submission of this paper will allow you to progress to the last component.

4. An oral exam that will cover more qualitative Chemistry problems. (Completed during April)

One or more professors will ask you questions, to which you will be asked to respond both verbally, and by writing/drawing answers on the board. The oral exam will cover more qualitative Chemistry problems. A more detailed explanation, and a list of typical topics is [HERE](#).

The meeting schedule and examinations are by arrangement.

Your final grade for the Exit Exam is a letter grade, which is based upon how you perform on the oral exam, according to the Rutgers official grading scheme (and explained in relevant terms to the oral exam).

A means "OUTSTANDING"

The student can answer (almost or) all of the posed questions correctly, and demonstrates a knowledge of facts AND an understanding of their scientific/molecular basis. There are no deficiencies in fundamental comprehension in important areas.

B means "GOOD"

The student can answer most of the posed questions, perhaps with some prompting. The student is aware of the facts, but struggles with explanations of their application (e.g. can state "X's LAW", but not fully explain why it operates). There may be an important area where the student is not as strong as others.

C means "SATISFACTORY"

The student can answer many of the basic questions, but struggles with others. The student is aware of rules/laws, and their general topic, but cannot recall pertinent details (e.g. "one of the laws of thermodynamics says something about entropy and absolute zero").

D means "POOR"

The student can answer only some of the basic questions, even with significant assistance. The student demonstrates large areas of deficient knowledge and comprehension.

F means "FAILING"

The student demonstrates too many unforgivable errors and omissions with the basic questions.