Course Description: This course in chemistry related calculations will enable students to become proficient in the mathematical skills necessary to the successful completion of a course in general chemistry. This includes use of significant figures, use of scientific notation, dimensional analysis, generating and interpreting graphs, the mathematics of stoichiometry, calculations with percentages, thermochemical calculations, working with logarithms, and solving quadratic equations. Recommended to be taken with CHEM 1411.

Text, References, & Supplies: There is no textbook for this course. Course materials will be delivered by handouts and through the Blackboard internet site for the course.

A scientific calculator is needed for this course. Each student must furnish their own writing instruments and notepaper.

Safety: Students are reminded that because the course meets in a chemistry laboratory room, there will be no eating or drinking allowed.

Students should also check their chairs and benchtops before use to ensure that they do not sit or place books or other belongings in any chemical reagents which may have been spilled during a lab class.
Course Goals/Objectives: Understand the mathematical methods pertaining to chemistry. Become comfortable with translating word problems into math problems, then solving those problems.
Quizzes and Homework 90%
Attendance & Participation 10%

Evaluation of Students: The grades for this course will come from quizzes and homework. The majority of these assignments will be online through Blackboard. This allows for graded exercises to be completed over a range of time. All graded exercises will be available to students for at least one week, therefore no make-up opportunities will be allowed. This also enables us to maximize our use of class time for student exercises and opportunities for the instructor to answer questions. Because the class meeting times will be used as much as possible for the students to learn by doing, attendance will account for part of the grade.

Student Contributions and Class Policies: Students are expected to attend class regularly, bring a calculator and participate in the classroom exercises. Excessive absences are discouraged due to the nature of the course. Attendance will be assessed each class day. Assignments are due as posted on the Blackboard site.

Any student having difficulty accessing the Blackboard website or graded exercises on the website is responsible for informing the instructor of the difficulty. Students will not be penalized for technical problems beyond their control, provided that the student seeks assistance in a timely manner.

Midland College does not tolerate scholastic dishonesty or academic misconduct in any form. Please read the MC Student Handbook on this subject.

Course Schedule: Course meets on Fridays from 10:00am – 10:50am in 216 Fox Science Building. Class will not meet on the Friday immediately following Thanksgiving.

Intellectual Competencies:
1. Reading - Understanding the material incorporated in this course will require the student to analyze and interpret various chemical concepts and the related mathematics needed to solve problems.
2. Listening – Although lecture time will be kept as brief as possible so that student learn-by-doing time can be maximized, listening carefully to instructions will enable the student to more comfortably complete the exercises.
3. Critical Thinking- Critical thinking, as exemplified by problem solving, is inherent in the study of any scientific discipline. Chemical problems and the mathematics involved in solving them will be considered, discussed, and analyzed in this course.
ADA Statement: Any student who, because of a disabiling condition, may require some special arrangements in order to meet course requirements should contact the instructor as soon as possible. These conditions may include documented physical or educational disabilities. Please be aware that services or accommodations are not automatic. Each student must request them and secure the proper authorizations.

Exemplary Objectives:

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<tr>
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<td>X X</td>
<td>CHEM 1104</td>
<td>Chemical Calculations</td>
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Competencies:

1. To understand and apply scientific methods and appropriate technology to the study of the natural sciences.

2. To recognize scientific quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.

3. To identify and recognize mathematical techniques appropriate to solving quantitative problems in chemistry.

4. To correctly apply both algebraic and geometric techniques to interpretation of data for problem solving.

5. To demonstrate knowledge of how numbers are used to reflect accuracy, precision and error in measured and calculated values.

Instructor Information:

Instructor: Julianne Braun, PhD

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Office Hours: Tuesdays & Thursdays 12:30pm – 5:30pm

Division Dean: Dr. Margaret Wade, 125 SF, 685-4615

Division Secretary: Ms. Norma Duran, 124 SF, 685-4612
Ms. Brenda Smith, 124 SF, 685-6413