

Course Syllabus

**GEOL 2409**  
**Mineralogy & Petrology I (4006015203)**

**Course Description:** Study of mineral crystallography, chemistry, classification, identification, and occurrence. Includes the genesis, classification, and identification of igneous, sedimentary, and metamorphic rocks.

**Semester Hours Credit:** 4

**Lecture/Lab Hours:** 3-3

**Prerequisite:** Three (3) hours of chemistry

To enroll in any science course, students must demonstrate readiness to perform college level academic coursework in reading and writing according to Coastal Bend College academic skills assessment guidelines. Basic computer skills are also required.

**Textbook(s):** *Manual of Mineralogy (20<sup>th</sup> edition)*      **ISBN:** 9780471805809

**Student Learning Outcomes:**

Upon successful completion of this course, students will:

1. Become familiar with the science of crystallography, the use of Hermann-Mauguin notations, Miller indices, orientation of crystal axes and projections.
2. Use the methods above to identify and report the major crystal classes and the more common and useful divisions of those classes.
3. Become familiar with the chemistry of minerals as it applies to composition, bonding, unit cells and coordination number, ionic size and substitution of different ions in the lattices.
4. Use the physical properties of a mineral to identify specimens that are distinctive and as a guide to identifying specimens that are not, using other means

5. Become acquainted with the principles of optical mineralogy and use of the polarizing petrographic microscope, but not to the point of proficiency.
6. Become familiar with the use of phase diagrams, the succession of minerals formed from a melt, the conditions that affect the formation of one mineral over another, and how it applies to the formation of different types of igneous rocks and their sedimentary and metamorphic derivatives.
7. Recognize sixty (60) of the most common minerals and be aware of the chemical species that make them up.
8. Identify unknown specimens by the methods listed above.

**Evaluation Methods:**

Students receive a grade based on the completion of at least four (4) lecture exams and a final exam in the lecture. The grades may also be determined by homework assignments and announced quizzes.

Laboratory grades are based on the scores of two (2) major practical exams: the crystallography exam and the mineral identification exam. The final exam is semi-comprehensive, usually 50%, and counts the same as other exams.

The final grade will be determined by the number of points earned divided by the total points possible and multiplied by 100. Lecture will count 75% and lab 25% of your total grade. Lab policies and grades are explained in a separate handout.

**ADA Statement:** No qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of the College District, or be subjected to discrimination by the College District. Nor shall the College District exclude or otherwise deny equal services, programs, or activities to an individual because of the known disability of an individual with whom the individual is known to have a relationship or association. 42 U.S.C. 12132; 28 CFR 35.130(g).

See at: [GL \(Legal\)](#)

**Special Needs Services:** Students with special needs, including physical and learning disabilities, who wish to request accommodations in this course should contact the Student Development Office as soon as possible to make arrangements; this should occur no later than the second week of class or as soon as the student has the documentation on the disability and requested accommodation per a certified medical or psychological professional. In accordance with federal law, a student requesting accommodations must provide documentation of disability to the Student Development Advisor.

For more information, contact: in Alice at [sdalice@coastalbend.edu](mailto:sdalice@coastalbend.edu); Beeville at [sdbeeville@coastalbend.edu](mailto:sdbeeville@coastalbend.edu); Kingsville at [sdkingsville@coastalbend.edu](mailto:sdkingsville@coastalbend.edu); and Pleasanton at [sdpleasanton@coastalbend.edu](mailto:sdpleasanton@coastalbend.edu).

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See at: [FLB \(Local\)](#) and [FM \(Local\)](#).

See the [Student Handbook](#) for further explanation of Scholastic Dishonesty.

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Coastal Bend College



**NOTE:** The College website ([www.coastalbend.edu](http://www.coastalbend.edu)) serves as the main source with the most current version of the Coastal Bend College Board Policies and the Coastal Bend College Catalog.

