GEOL 501: APPLIED STRATIGRAPHY

Credit: 3.00
Instructor: Dr. Piret Plink-Björklund
Pre-requisite Knowledge: Undergraduate course in sedimentology and stratigraphy

GEOL 501 offers a pragmatic approach to analyzing sediments and sedimentary rocks and provides a graduate level foundation of sedimentological concepts necessary for geologists in the minerals industry. Students learn 1) fundamental principles of sedimentology and stratigraphy, 2) pragmatic problem-solving skills, and 3) practical field skills for analyzing the sedimentary record. Focus is on lifelong learning and significance of hypothesis- vs model-based research. Students are guided through a detailed synopsis of the different functions of sedimentological and stratigraphic studies in academia and industry and taught to apply fundamental principles and field practices to different businesses.

GEOL 501 provides fundamental understanding and an overview of multiple industrial applications of sedimentology and stratigraphy including petroleum and mineral exploration. Successful students gain practical field skills to assess the sedimentary record and evaluate data against different tectonic and climatic controls, compositional make up, and sedimentary environments. Sedimentary hosted mineral deposits and the recognition of chemical traps that control mineralization are notable topics in this course. Nearly 50% of GEOL 501 is spent in the field examining a variety of terrestrial and shallow marine outcrops near Golden, CO. Additionally, the class includes a field trip to the Southern Californian fore-arc basin to observe deep water sedimentary systems. This advantage allows for a student to fully absorb course material through on-location lessons and hands-on exercises. After completing this course student will be able to critically appraise data with a QA/QC mentality to assure a high level of scientific excellence. By guiding one through basin analyses, various descriptive facies, and their global distribution, GEOL 501 provides a scholar the experience to identify depositional environments and recognize paleo-environments of deposition. Students are also trained to solve interdisciplinary problems frequently encountered in industry. Example situations include: Addressing difficulties that arise from a rock wall competence, complications due to borehole collapse, formulating solutions that enhance recovery of mineral resources. GEOL 501 provides the basis for critical analysis of sedimentary rocks and enhances the skills of any person working with sedimentary materials.