PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE
SCHOOL OF ENGINEERING
DEPARTMENT OF STRUCTURAL AND GEOTECHNICAL ENGINEERING
ABET COURSE SYLLABI

ICE2024 ANDEAN GEOLOGY AND GEODYNAMICS

Credits and contact hours:	10 UC credits / 10 hours (3 h. Lectures and 7 h. Independent learning experiences)
Instructor's name:	To be defined
Course coordinator's name	To be defined
Textbook:	Inken, O. et. al. (2001) The Andes, active subduction orogeny. Springer Moreno, T.; Gibbons, W. (2007) The Geology of Chile, Geological Society of London (eds).
Course Catalog Description:	This course is planned to be taught in 2016. Students will understand the geological Andean environment, from Paleozoic to Cenozoic, as a classic example of an active tectonic margin of subduction between a continental plate (South American plate) and an oceanic plate (Nazca and Antarctica plate). Empiric evidence of Andean geological evolution underlies sample for geodynamic processes of first order that stand for the tectonic style of active margins.
Prerequisite Courses:	ICE2633 Structural geology and tectonics and ICE2630 General geophysics
Co-requisite Courses:	None
Status in the Curriculum:	Required
Course Learning Outcomes:	Identify the factors and critical processes that have conditioned the geological evolution of the Chilean Andes. Identify the basic geology of Chilean national territory. Understand the effect of time and space on geological evolution. Develop de ability of association for a better understanding of problems on multiple time and space scales. Apply the scientific method to understand the Andean geological evolution.
Relation of Course to ABET Criteria:	a. Knowledge of mathematics, science and engineering d. Multidisciplinary teams f. Professional and ethical responsibility g. Effective communication h. Broad education necessary for global, economic, environmental and societal context j. Knowledge of contemporary issues

Topics covered:	Current processes on the active Chilean margin. South America in the Archean and Proterozoic. The Andean region during the Paleozoic and early Mesozoic. Central Andean tectonic during the Jurassic and Cretaceous. Geological evolution in the Cenozoic at northern Chile, Bolivia and Peru. Cenozoic tectonics of the Central Andes of Chile and Argentina. Geology and tectonics of the Patagonia and southern Andes. Synthesis and global comparison.