



# VOLCANOES, RAIN FORESTS, CAVES, AND BEACHES IN BRAZIL (EES 3865: Field Investigations)

Guil Gualda & Malu Jorge, Earth & Environmental Sciences

**SCOPE:** We will study Earth and Environmental processes and systems in the field, with an emphasis on field methods. In 2016, the course will be held in Brazil, which will give us the opportunity to study a variety of topics in the Earth and Environmental Sciences, including past volcanic activity, surface geomorphology, cave geology, ecology of the rain forest, biological conservation, and human dimensions of conservation.

**VOLCANOES, CAVES, AND GEOMORPHOLOGY:** Rocks preserve the most extensive record of the evolution of the planet, from which we are able to retrace Earth’s history over 4.5 billion years. We will study the geologic processes related to the breakup of South America and Africa and the opening of the South Atlantic Ocean some 130 million years ago. We will study volcanic supereruptions and their deposits, cave geology and associated underground water systems, and landform evolution since the opening of the South Atlantic Ocean.

**PROGRAM:** The course will start in Florianópolis on May 9 and finish in São Paulo on June 3, 2016. We will visit several areas:

- FAROL DE SANTA MARTA (Santa Catarina State): Rock types, plate tectonics, magmatism, sedimentation, field methods.
- SERRA GERAL (Santa Catarina and Rio Grande do Sul States): From oceans to deserts to volcanic landscapes; volcanism leading to the opening of the South Atlantic Ocean; Field research of supereruption deposits.
- FLORIANÓPOLIS (Santa Catarina State): Free days mid-course at a island city with beautiful beaches and plenty of activities.
- ALTO RIBEIRA CAVE DISTRICT (São Paulo State): Evolution of karstic landscapes, cave development, and subterranean water systems; Highland Rain forests in São Paulo state; Human dimensions of conservation.
- ILHA DO CARDOSO (São Paulo State): Rain forests and other coastal environments; Forest fragmentation and conservation issues; Human-environment interactions in a protected area.

**ECOLOGY AND CONSERVATION BIOLOGY :** The Brazilian Atlantic rainforest extends from the north to south along the coast of Brazil. It encompasses more than 50,000 species of animals and plants, a biodiversity similar to that of the Amazon. It is also highly threatened as almost 90% of its area has been converted into crops and cities. Students will learn important aspects of tropical ecology, biodiversity, conservation, and management in direct contact with one of the most diverse and threatened rainforests in the world.

**EVALUATION:** Course evaluation will be based on participation, field exercises, short project reports, and oral presentations.

**REQUISITES:** Students with all levels of expertise in geology and biology are encouraged to apply. Activities will be adjusted to take into account prior experience and course-work. EES 3865 has no formal prerequisites. **CREDITS:** 3 (MNS)

**EXPENSES:** Course fee includes tuition, lodging, transportation, occasional meals (depending on location), and entrance fees to National and State Parks. It does not include airfare from Nashville to Florianópolis or from São Paulo to Nashville, transportation from and to airports, regular meals in major cities, or incidental expenses.

**FINANCIAL SUPPORT:** For information on the Global Summer Fellowship Program, offering scholarships of up to \$8,500, consult GEO: [www.vanderbilt.edu/studyabroad](http://www.vanderbilt.edu/studyabroad).

**MORE INFORMATION:** <http://tinyurl.com/ees210>

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**TO APPLY:** <http://tinyurl.com/o89uabt> (by Jan 29, 2016)

