

Biology 2100: Island Biogeography of New Zealand
Pacific Study Abroad Program, Spring 2012
(3 credit hours)

Instructors: Dr. David Garton, Georgia Tech

Course Description:

This course introduces students to the basic concepts of biogeography (factors determining the distribution of species) as applied in the special case of islands. The two oceanic islands comprising New Zealand provide relevant examples of the interaction of geology (plate tectonics, island formation, geological history, and the influence of land forms) and biology (size of islands, distance from mainland, adaptive radiation and island endemism). The first half of the course focuses on the geological setting of New Zealand, and the second half on the biological processes of colonization, adaptive radiation and extinction. The varied land forms of New Zealand provide an excellent laboratory for observing the island forming process, which is still active. National parks have preserved the natural plant and animal communities, found nowhere else on the planet, and which the students will have the opportunity to observe first-hand.

This course includes field trips to geological sites and natural preserves. All students should be able to negotiate difficult terrain, as well as be prepared to deal with inclement weather.

Textbook: *The Song of the Dodo: Island Biogeography in an Age of Extinctions*, David Quammen

This course uses detailed hand-outs and field exercises prepared specifically for this course by the participating faculty.

Grading statement:

Two midterm exams (closed notes):	25% each
Field journal:	20% (will be checked several times during the term)
Research Paper	15%
Class Participation:	10%

Both exams will be administered at Victoria University. The field journals, which include data analysis and interpretation to answer specific questions, will be due two weeks after the end of first term and before the class returns to the US.

Date	Lecture Topic	Field Activity
Mon, Jan 9	Introduction to Biogeography	Te Papa Museum
Tues, Jan 10	Principles of Biogeography I	
Wed, Jan 11	Principles of Biogeography II	
Thurs, Jan 12	Principles of Evolution I	
Mon, Jan 16	Principles of Evolution II	

Tues, Jan 17	Introduction to Geology	
Wed, Jan 18	Earth Structure & Volcanoes	
Thurs, Jan 19	Depart for Taupo Volcanic Region	
Mon, Jan 23	Islands and Atolls	
Tues, Jan 24	Stratigraphy	
Wed, Jan 25	Exam 1 (first half of course)	
Thurs, Jan 26	Speciation I: How species form	
Mon, Jan 30	Speciation II: Why Islands are Different	
Tues, Jan 31	All day field trip to Mt. Bruce	
Wed, Feb 1	Biodiversity I	
Thurs, Feb 2	Biodiversity II	
Feb 6	Field trip to Wellington South Coast	
Feb 7	Biodiversity III/Field trip to Karori Sanctuary (afternoon)	
Feb 8	Human Impacts on the Biosphere	
Feb 9	A Biological History of New Zealand	
Feb 13	Unique Plants & Animals of New Zealand	
Feb 14	Unique Plants & Animals of New Zealand	
Feb 15	Student Presentations & Review Session	
Feb 16	Midterm Exam 2 (2 nd half of course)	