

Geology, Resources, and Environment of Latin America

GEOS 3321 (3 semester hours)

Fall Semester 2004

Instructors: Dr. Ignacio Pujana, Dr. Robert J. Stern (in sabbatical)and Dr. Cynthia Ledbetter

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Office number FO 2.616, office hours by appointment.

Tuesdays and Thursdays, 3:30 p.m. to 4:45 pm.

Classroom FO 2.604

Course Purpose

This course is an overview of the natural environment of Latin America, and how this is being impacted by human activity. Topics include evolution of Latin American crust and continent; location and formation of major geologic resources and physiographic features; Resource exploitation and present environmental impact with an historic perspective.

Course Themes

This course is designed as an interdisciplinary exploration of several examples of how the physical environments of Mexico, Central America, South America, and the Caribbean have influenced the prehistory, history, culture, and economy of Latin America. This material will be presented as an introduction and 4 modules that stress the role that the physical environment plays in determining culture, development, and history. It will satisfy 3 of the 9 hour science requirement for UTD undergraduates. The course will require the student to partner with correspondents in Latin American universities in a research project

Over the semester we will aim to understand the nature of the geological processes in general, and the particular consequences they produce in the land. It will be given emphasis in man and the way different cultures along Latin America adapted to different circumstances. We will consider their historical and cultural implications, and the micro-geographies of culture; and the geographies of development.

Course Materials

The course will use different materials to convey its concerns. Much of the class will revolve around lectures, with discussion time. We will also use of web resources, e-mail (in particular to work with your correspondent) films, videos and slides.

A very important part the course will be the final project that you will work on as part of a group.

Course Text and Readings

Textbook: There is no textbook. Power Point presentations used on class will be made available to the students.

Class Requirements

- 1) Class attendance and participation: We expect you to attend all classes, unless you are sick. We also expect you to participate in class discussions. This participation will contribute to your grade.
- 2) Two mid-term examinations. There will be two mid-term examinations. The first will assess your knowledge of material covered in weeks 1 to 5; the second will assess your knowledge of material covered in weeks 6 to 10. Each mid-term will count for 20 percent of the final grade. There will also be a geography 'pretest' which will tell us how well you know the location of major features in Latin America. This pretest will not count towards your grade.
- 3) Term project. A very important part of the course will be a term project. Students will form groups (optimum size: 3 students), each of which will identify and investigate an issue in Latin American geography, resources, or environment. Our goal is to provide an intellectually exciting experience, investigating problems that you have identified, and to provide feedback and supervision for this activity. Course instructors will work with each student to establish contact with a student or faculty member at a Latin American geology or environmental sciences department who is willing to serve as the group's correspondent, and to inquire about what are the major challenges facing the region that can be related to one of the topics covered in course modules.
- 4) Final Exam at the scheduled time.

Grading

Your final grade will be made up as follows:

Attendance and participation	10 percent
Mid term examinations	40 percent (20 percent for each mid-term)
Term project	30 percent
Final	20 percent

Class Schedule:

Tuesday (T) 3:30-4:45; Thursday (Th) 3:30 -4:45; FO 2.604

We ek #	Clas s #	Date	Theme	Module	
1	1	August 18, Th	Introduction and Geography pretest	Introdu ction:	
2	2	August 23 T	Cultural Geography of Latin America	Module I	
	3	August 25 Th	Physiography, Geography and Climate of L.A.		
3	4	August 30 T	Plate tectonics		
	5	Sept. 1 Th	Geologic setting and evolution of LA		
4	6	Sept. 6 T	Humans in Latin America and Pre-Columbian Cultures		Minerals Module II
	7	Sept. 8 Th	Pre-Columbian history of gold, silver, and other metals		
5	8	Sept. 13 T	Collision of Civilizations		
	9	Sept. 15 Th	Colonial Silver- Potosí (Bolivia) and Guanajuato (Mexico)		
6	10	Sept. 20 T	Postcolonial Mining and Development: The Chilean Example		
	11	Sept. 22 Th	Review for mid term		
7	12	Sept. 27 T	First Mid Term		
7	13	Sept. 29 Th	Oil and Gas Basics	Energy & Natural Hazards,	
8	14	Oct. 4 T	Oil and Gas in LA		

	15	Oct. 6 Th	Organizational Meeting about projects	
9	16	Oct. 11 T	Geothermal Energy	Water and Environment , Module IV
	17	Oct. 13 Th	L A Earthquakes	
10	18	Oct. 18T	L A Volcanic Hazards	
	19	Oct. 20 Th	El Niño	
11	20	Oct. 25 T	Glaciers and Climate Change in Latin America	
	21	Oct. 27 Th	Amazon River	
12	22	Nov. 1 T	Review; Projects and groups must be defined	
	23	Nov. 3 Th	Second Mid Term	
13	24	Nov. 8 T	Rain Forest	
	25	Nov. 10 Th	Coral Reefs	
14	26	Nov. 15 T	U.S. Mexico Water I	
	27	Nov. 17 Th	U.S. Mexico Water II	
15	28	Nov. 22 T	Project Day- Presentation of projects	
	29	Nov. 24 Th	Holiday -----Thanksgiving day	
16	30	December Friday	Final Exam	