THE UNIVERSITY OF WESTERN ONTARIO
Department of Geography

Fall Term 2017

Geography 2320A – Introductory Biogeography

Instructor: Dr. Gabor Sass, Assistant Professor
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Office hours: Thursdays 12:00 p.m. – 1:00 pm (SSC2221) (or by appointment)
Lectures: Thursdays 9:30 a.m. – 11:30 pm (SSC 3006)
Tutorials: Thursdays 1:30 – 2:30 pm (SSC 3028)

Tutorial assistant: Oscar E-Senar (E-mail: oesenar@uwo.ca);
Office hours: Tuesdays 10-11, SSC 2304

Course Calendar: Geography 2320a Introductory Biogeography – Spatial distributions of plants and animals; evolutionary and environmental controls on distributions; impacts of human settlement. Prerequisite(s): 1.0 course from Geography 1100, Geography 1300A/B, Geography 1400F/G, Geography 1500F/G, Geography 2131A/B, Geography 2153A/B, Environmental Science 1021F/G; or enrolment in the Major in Physical Geography. 2 lecture hours, 1 laboratory hour, 0.5 course.

"Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites."

Course Description:
Biogeography is the study of the **distribution patterns of organisms in both the past and in the present**. Biogeographers must ask questions that are in part historical:

- how did a species come to be confined to its present range?
- how have geologic and major climatic events such as continental drift and Pleistocene glaciation shaped distribution patterns?
- why are the animals and plants of isolated regions so distinctive?

Other questions biogeographers must ask are ecological because they concern the **relationships between organisms and their environments**:

- what enables a species to live where it does and what prevents it from expanding into other areas?
- what role does climate play in limiting distribution?
- why are there so many more species in the tropics than at temperate or arctic latitudes?
- how are new locations colonized?

The study of biogeography must also include **humans and their effects on ecosystems**:

- what will happen to natural systems during and after construction of human structures?
- what have been the effects of human settlement on natural systems?
- what have been the effects of habitat alteration and loss on plants and animals?

The objective of Geography 2320 will be to examine how the distribution and nature of plants and animals vary over the surface of the Earth and how we can account for this variation. An important part of the course will be a discussion of The Theory of Island Biogeography, how this theory can be used to understand problems faced by animals and plants in today's human-dominated landscapes, and what can be done to alleviate and hopefully solve these problems.
Specifically, the following topics will be addressed:

- historical and environmental controls on distributions of plants and animals;
- the Theory of Island Biogeography and its application to real-world problems;
- impacts of human activities on other organisms;
- conservation and restoration.

As well**,** Geography 2320 has the following learning objectives in relation to Geography undergraduate programs:

- You will gain knowledge about the fundamental characteristics of, and processes operating in, biophysical systems.
- You will gain knowledge about the interactions between biophysical and human landscapes and environments.
- You will gain knowledge about geographical and environmental change across a range of spatial and temporal scales.
- At the end of Geography 2320, you should be able to identify, analyze, and interpret some spatial patterns and relationships within natural systems.
- By completing the research assignment, you should improve your skills in independent research and written communication.

Required text: Biogeography: (Lomolino M., et al. 2016 - 5th edition) [TAY QH84.B76 2017], two on reserve and 3 older editions).

Recommended texts:

Cox, C.B. and P.D. Moore. 2005. Biogeography: an ecological and evolutionary Approach (QH84.C65 2005).

Flannery, T. 1994. The Future Eaters: an ecological history of the Australasian lands and people, Grove Press.

Lomolino, M.V. and L.R. Heaney (eds.). 2004. Frontiers of Biogeography. New Directions in the Geography of Nature, Sinauer Associates. (QH84.F76 2004)

Lomolino, M.V., D. F. Sax, and J.H. Brown (eds.). 2004. Foundations of Biogeography. Classic papers with commentaries, University of Chicago Press. (QH84.F68 2004)

Quammen, D. 1997. The Song of the Dodo: Island Biogeography in an Age of Extinction, Pimlico. (QH541.5.I8Q35 1996)

Evaluation:			
	Mid-term test (Oct. 26th in-class)	-	20%
	Final exam (TBA)	-	30%
	Attendance & Participation	-	10%
	Tutorial assignments (best 8 out of 10)	-	16%
	Research assignment - annotated bibliography and research summary	-	24%

Topics covered

Date	Topic	Readings
Sept. 7th	Introduction to the course; What is **Biogeography**?	Chapter 1 (3-11), Chapter 2 (13-38)
Tutorial	*Film and discussion*: Darwin's Struggle: The Evolution of the Origin of Species	
Sept. 14th	Ecological Foundations: The Geographic Template	Chapter 3 (41-59)
Tutorial	*Film and discussion*: Planet Earth - Pole to Pole	
Sept. 21st	Ecological Foundations: Distributions of Species	Chapter 4 (71-100)
Tutorial	*Exercise*: Coyote removal in Texas	
Sept. 28th	Ecological Foundations: Distributions of Communities	Chapter 5 (101-112)
Tutorial	*Walk along Medway creek:* The eastern deciduous forest biome	
Oct. 5th	Ecological Foundations: Biomes	Chapter 5 (113-139)
Tutorial	*Exercise:* Biomes and their biodiversity	
Oct. 12th	Reading Week (no class)	Happy Thanksgiving!
Oct. 19th	Mid-Term Exam in class (2 hr)	Chapters 1-5
Tutorial	Help with research project	
Oct. 26th	Fundamental Biogeographic Processes: Dispersal and Immigration	Chapter 6 (143-176)
Tutorial	*Film and discussion*: Kakapo	
Nov. 2nd	Fundamental Biogeographic Processes: Speciation and Extinction	Chapter 7 (177-220)
Tutorial	*Exercise:* Evolution on Galapagos	**DUE:** Part 1 of research assignment
Nov. 9th	Fundamental Biogeographic Processes: The Changing Earth (Plate Tectonics and Climate Change)	Chapters 8 & 9
Tutorial	Visiting Biogeographer: TBA	
Nov. 16th	Island Biogeography	Chapter 13
Tutorial	*Exercise*: Do corridors have value?	
Nov. 23rd	Conservation Biogeography	Chapter 15 (605-633)
Tutorial	*Exercise:* Caribou Conservation Conundrum	
Nov. 30th	Restoration Biogeography	Markwith (2011); Fei et al. (2012)
Tutorial	*Exercise:* Restoring wetlands	
Dec. 7th	Cultural Biogeography	Chapter 15 (589-605); Pretty et al. (2009)
Tutorial	Final exam review	**DUE:** Part 2 of research assignment

Lecture notes and other additional material will be placed on OWL Sakai in a timely fashion, available for downloading.

There will be one two-hour mid-term test (worth 20%) and a final examination (30%) in Geography 2320. The mid-term will be held on October 19th in class. The final examination (3 hours) will be scheduled by the Registrar during the December examination period. The examinations will include questions from

material covered in lectures, discussions, assigned readings, tutorial exercises and films. The final examination will include material from the entire term. The format of the examinations will be a combination of multiple choice, short and long answer type questions. No electronic devices (e.g. laptop computers, cell phones, etc.) will be allowed during an examination.

The tutorials will be used for guest lectures, exercises, films, discussion and exam reviews. In mid-September you will be asked to choose a topic to research. You will then hand in a preliminary bibliography with key citations for your research topic (due November 2nd). *You must include a statement of your research topic (what you are going to look at and why) with this preliminary reference list – this preliminary bibliography will then be marked and approved.* The final research assignment will include *a properly-referenced list of the sources you used (10 academic papers, 2 academic books, and 3 websites*), *an annotated bibliography of the references used for the research and a 5 page synopsis of what you learned.* It will be due during the last tutorial in the course (December 7th) and will be worth 24%. I will be happy to go over your assignment with you at any stage of preparation.

With the exception of documented illness or family death (see below), late assignments will be penalized at the rate of 10% per day of lateness. Upon presentation of legitimate documentation, a student can hand in the assignment within 2 weeks without late penalty or the mark value for the assignment will be added to the mid-term and final examinations in an equitable manner.

Academic Offences:
Scholastic offences are taken seriously at the University of Western Ontario (for definitions of what constitutes a scholastic offence, please refer to the following website:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

Missed exams, tutorials, and assignment due dates because of illness or family death, see:
UWO Policy on Accommodation for Medical Illness:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf
Downloadable Student Medical Certificate (SMC): https://studentservices.uwo.ca/secure/medical_document.pdf

Students seeking academic accommodation on medical grounds for any missed tests, exams, participation components and/or assignments worth 10% or more of their final grade must apply to the Academic Counselling office of their home Faculty and provide documentation. Academic accommodation cannot be granted by the instructor or department.

Documentation is required for either medical (i.e. illness, accident, surgery) or non-medical academic (i.e. close family death) accommodation; this documentation must be submitted by the student directly to the appropriate Faculty Dean`s office and not to the instructor. It will be the Dean`s office that will determine if accommodation is warranted. For all other types of accommodation, please make an appointment with Dr. Sass to discuss the problem.

Mental Health
If you or someone you know is experiencing distress, there are several resources here at Western to assist you. Please visit the site below for more information on mental health resources: http://www.uwo.ca/uwocom/mentalhealth/.

Western's commitment to accessibility
The University of Western Ontario is committed to achieving barrier free accessibility for persons studying, visiting and working at Western.

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

Support Services
Registrarial Services: http://www.registrar.uwo.ca/ Student Development Services: http://www.sdc.uwo.ca/