

THE UNIVERSITY OF WESTERN ONTARIO
Department of Geography

Fall Term 2013

Geography 2320A – Introductory Biogeography

Instructor:	Dr. Gabor Sass, Assistant Professor Office: SSC 2221 (E-mail: gabor.sass@uwo.ca)
Office hours:	Thursdays 1:00 p.m. – 1:30 pm; 2:30 pm – 3:00 (SSC 2221) (or by appointment)
Lectures:	Thursdays 10:30 a.m. – 12:30 p.m (SSC 3026)
Tutorials:	Thursdays, 1:30 – 2:30 p.m (SSC 2028)
Tutorial assistant:	Ivan Lee (ilee23@uwo.ca)

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

Please note: You are responsible for ensuring that you have successfully completed all course prerequisites. Lack of prerequisites may not be used as a basis for appeal. If you are found to be ineligible for a course, you may be removed from it at any time and you will receive no adjustment to your fees. This decision cannot be appealed. If you find that you do not have the course requisites, it is in your best interests to drop the course well before the end of the add/drop period. Your prompt attention to this matter will not only help protect your academic record, but will also ensure that spaces become available for students who require this course for graduation.

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. 2010 - 4th edition) [TAY QH84.B76 2010].

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)
- MacArthur, R.H. 1972. Geographical Ecology. Patterns in the Distribution of Species, Princeton University Press. (QH84.M23)
- Quammen, D. 1997. The Song of the Dodo: Island Biogeography in an Age of Extinction, Pimlico. (QH541.5.I8Q35 1996)

Topics covered

Date	Topic	Readings
Sept. 12 th	Introduction to the course; What is Biogeography anyways?	Chapter 1 (3-14), Chapter 2 (41-44)
Tutorial	Introduction to assignments; <i>Film and discussion:</i> Darwin's Struggle: The Evolution of the Origin of Species	
Sept. 19 th	Ecological Foundation: The Geographic Template	Chapter 3 (47-69)
Tutorial	<i>Film and discussion:</i> The Lost World of Lake Vostok	
Sept. 26 th	Ecological Foundation: Distributions of Species	Chapter 4 (83-119)
Tutorial	<i>Film and discussion:</i> Planet Earth - Pole to Pole	
Oct. 3 rd	Ecological Foundation: Distributions of Communities	Chapter 5 (121-164)
Tutorial	Walk along Medway creek	
Oct. 10 th	Ecological Foundation: Biomes	Chapter 5 (121-164)
Tutorial	<i>Film and discussion:</i> Planet Earth - Seasonal forest	
Oct. 17 th	Fundamental Biogeographic Processes: Dispersal and Immigration	Chapter 6 (167-206)
Tutorial	Part 1 of research assignment due (Pass/Fail) Mid-term Exam review	
Oct. 24 th	Mid-Term Exam in class (2 hr)	
Tutorial	Help with research project	
Oct. 31st	Fall Study day	
Nov. 7 th	Fundamental Biogeographic Processes: Speciation and Extinction	Chapter 7 (207-258)
Tutorial	Visiting Biogeographer: Dr. Ian Colquhoun	
Nov. 14 th	Fundamental Biogeographic Processes: The Changing Earth (Plate Tectonics and Climate Change)	Chapters 8 & 9
Tutorial	Student presentations	
Nov. 21 st	Island Biogeography	Chapter 13
Tutorial	Student presentations	
Nov. 28 th	Ecological Geography of Biotas	Chapter 15
Tutorial	Student presentations	
Dec. 5 th	Conservation Biogeography	Chapter 16
Tutorial	Research projects due; Final exam review	

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

Evaluation:	Mid-term test	-	20%
	Final exam	-	35%
	Attendance & Participation	-	10%
	Group project	-	15%
	Individual research assignment - annotated bibliography and research summary	-	20%

There will be one two-hour mid-term test (worth 20%) and a final examination (35%) in Geography 2320. The mid-term will be held in late October. 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, 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 special guest lectures, films and discussion and group presentations, discussions, and exam reviews. In mid-September you will be asked to choose a topic to research from a prepared list. You will then hand in a preliminary bibliography with key citations for your research topic (due October 17). *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 approved (or not) by the course TA.* Once approved, you may continue your research in earnest. The final research assignment will include *a properly-referenced list of the sources you used (10 academic articles, 2 academic books, and 3 websites) and a 3 page synopsis of what you learned which must include a statement of how your research relates to the course material covered in lectures and tutorials. It will be due during the last tutorial in the course (December 5th) and will be worth 20%.* 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 5% or 20% for the assignment will be added to the mid-term and final examinations in an equitable manner.

Marking scheme:

Your evaluation is based primarily on your ability to fulfill the objectives of the course as evidenced in the assignment, term test, and final exam. The grades will reflect the following: the mark of 'C' (60%-69%) is indicative of average work, both competent and acceptable. You have completed all of the assignments and readings and demonstrated a general understanding of the course material as evidenced in the mid-term examination and final exam. A grade of 'B' (70%-79%) reflects evidence of an above average effort and performance. Not only have you fulfilled the assignment in a more meticulous fashion, you have demonstrated a more thorough understanding of the material and gone a few extra steps beyond the average student as evidenced on the mid-term test, final exam, and in your written work. An 'A' (80%-89%) is reserved for outstanding effort and achievement. Exceptional diligence, a thorough knowledge of the course material, and the ability to apply and convey concepts in an effective, logical and literate fashion are clearly evident. Hard work and exceptional effort are necessary but not, by themselves, sufficient to warrant an 'A'. An 'A+' (90%+) is extremely rare. An exceptionally outstanding performance on the mid-term and final examinations and the assignment demonstrating a superb

command of English and a critical mind capable of synthesizing complex facts and ideas to arrive at particularly astute conclusions, will earn this prestigious grade.

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/handbook/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:

<https://studentservices.uwo.ca/secure/index.cfm>

Downloadable Student Medical Certificate (SMC):

http://www.uwo.ca/univsec/handbook/appeals/accommodation_medical.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.

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.

Code of Conduct:

Social conduct is governed by the Code of Student Conduct approved by the Board of Governors of the University. This Code can be viewed at: <http://www.uwo.ca/univsec/board/code.pdf>.

Mental Health:

If you or someone you know is experiencing distress, there are several resources here at Western to assist you. Please visit <http://www.uwo.ca/uwocom/mentalhealth/> for more information on these resources and on mental health.