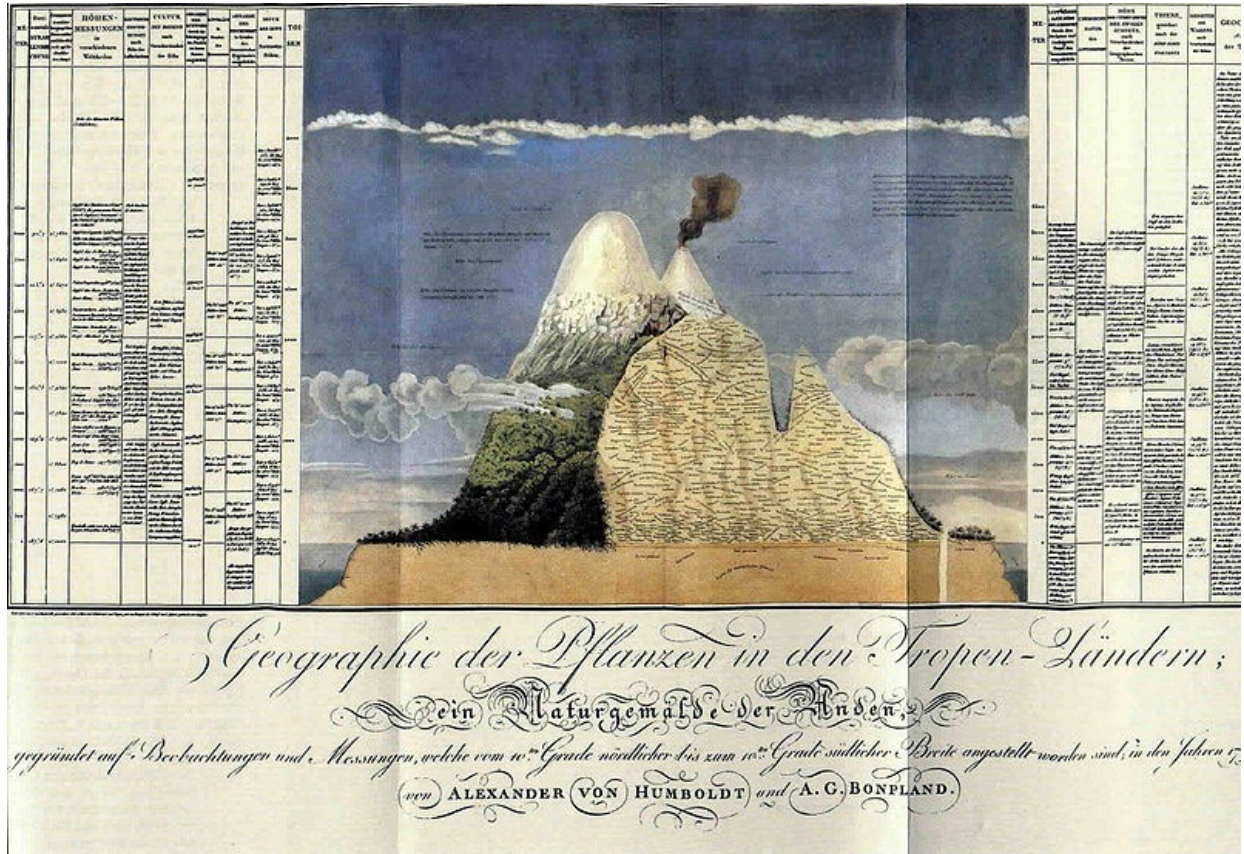


## Geography 335 Syllabus

**Course number and title:** Geography 335, Pattern and Process in Biogeography

**Term:** Spring 2025

**Meeting times and location:** MWF 8:00–8:50 am; O&M 112



Alexander von Humboldt's diagram of vegetation distribution on Chimborazo, a peak in the Andes. The image is in the public domain (source:

<http://www.math.yorku.ca/SCS/Gallery/images/humboldt/humboldt1805-chimborazo.jpg>)

### Course Description and Prerequisites

**Description:** Biogeography is a branch of geography. It is also studied in other disciplines, notably biology and geology, with some differences in perspective and emphasis. Biogeography is also important to applied fields such as forestry and conservation. Like all sciences, biogeography and physical geography are about identifying problems and solving them. The problems in biogeography are the spatial patterns by which organisms are distributed over the earth's surface. To solve these problems we attempt to understand processes that contribute to the patterns. Hence the title of this course: pattern and process in biogeography.

**Prerequisites:** Junior or senior classification. It will be advantageous to have completed other courses in physical geography, especially Geography 203 (Planet Earth), but that course is not an official prerequisite for Geography 335.

**Learning Outcomes:** Students will be able to (1) describe biogeographic patterns through maps, graphs, and quantitative and written expressions; (2) interpret the arrangement of organisms over the earth's surface; (3) articulate theories that guide our understanding of biogeography; (4) predict biogeographic patterns that emerge from the operation of ecological and historical processes, including human actions; and (5) explain conservation implications of biogeographic concepts.

## Instructor Information

**Instructor:** Dr. Charles Lafon

**Office:** CSA Building, Room 207

**Office Hours:** Tuesday 1:30–2:30 pm, Wednesday 2:00–3:00 pm, Friday 3:00–4:00 pm, or by appointment.

**Phone:** 862-3677; Geography Dept. phone: 845-7141

**E-mail:** clafon@tamu.edu

## Textbook and Other Resources

**Required Textbook:** Huggett, R.J. 2004. *Fundamentals of Biogeography*. 2nd edition. Routledge, London

**Free access to the required textbook** is provided through the Texas A&M University Libraries:

[https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=115699&site=eds-live&scope=site&authtype=shib&custid=s8516548&ebv=EB&ppid=pp\\_C](https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=115699&site=eds-live&scope=site&authtype=shib&custid=s8516548&ebv=EB&ppid=pp_C)

**Other resources on Canvas:** Other resources will be available through Canvas.

**Materials on reserve at the TAMU Libraries:** Several items (scientific journal articles and book chapters) are available at the course reserves section of the TAMU libraries in the library annex. You can find these sources, some of which are accessible online, listed on our class reserves site by logging in through the TAMU libraries website. Go to <http://library.tamu.edu/>, then choose the Services link and scroll down to Course Reserves to log in. You can also access most of them by searching Google Scholar, which is available through the TAMU libraries website.

## Grading Policy

Item	Points	Percent of Total
Quizzes (16 quizzes at 5 pts each)	75*	19.8%
Exam 1	60	14.8%
Exam 2	68	16.8%
Exam 3	88	21.7%
Landscape interpretations (5 LIs at 16 pts each)†	64**	15.8%
Biogeographical explorations (3 BGXs at 15 pts each)	45	11.1%
Total	400	100%

\*Note: You can skip one Quiz without harming your opportunity to earn all 400 points. This means that the total of 75 points is based only on the number of points in 15 quizzes, not all 16 of them. (If you take all 16 quizzes, you could earn up to 80 out of 75 points).

\*\*Note: You can skip one LI without harming your opportunity to earn all 400 points. This means that the total of 64 points is based only on the number of points in 4 LIs, not all 5 of them. (If you submit all 5 LIs, you could earn up to 80 out of 64 points).

†Note: I provide example Landscape Interpretations (LIs) describing aspects of the biogeography of the San Francisco Peaks, which is my example landscape. You can use my example LIs as guides for writing yours. Additionally, the exams may reference the example LIs concerning the San Francisco Peaks, so please make sure you read all of them.

I use the standard ten-point grading scale (90-100% = A, 80-89% = B, 70-79% = C, 60-69% = D, ≤ 59% = F) but reserve the option to adjust the grades upward, if necessary, at the end of the semester.

## Attendance, Make-Up, and Late-Work Policies

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments. Please refer to Student Rule 7 in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor. Please refer to Student Rule 7 in its entirety for information about makeup work, including definitions, and related documentation and timelines. Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See Student Rule 24.)

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor” (Student Rule 7, Section 7.4.1).

“The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence” (Student Rule 7, Section 7.4.2).

You will be permitted to make up assignments that you miss for a university-excused absence, provided you have made proper notification. You will not be permitted to make up a quiz, exam, or Biogeographical Exploration without a university-excused absence. You may, however, submit a Landscape Interpretation assignment late without an excused absence, in which case 10% is deducted per day that the assignment is late.

### **Required Technology**

To complete this course, you will need access to the following technologies:

- a computer with a word processor and software to view Powerpoint and PDF files
- email
- reliable high-speed internet with current/updated web browser

Technological failures are not grounds for receiving an extended deadline for an assignment.

### **Useful Links**

TAMU Instructional Technology Services (You can find technical help here): <http://its.tamu.edu/>

TAMU Help Desk Central (You can also find IT technical help here): <https://hdc.tamu.edu/>

Texas A&M Libraries: <http://library.tamu.edu/>

Student Counseling: <https://scs.tamu.edu/>

TAMU College of Geosciences: <https://geosciences.tamu.edu/>

TAMU Department of Geography: <https://geography.tamu.edu/>

American Association of Geographers: <http://www.aag.org/>

American Geographical Society: <http://americangeo.org/>

National Geographic Society: <https://www.nationalgeographic.org/>

### **Communication Policy**

**Response time for email inquiries:** two business days from the time email was received

**When grade postings may be expected:** within one week of the submission due date. In the case of exams, the date of the last makeup exam determines when the exams can be graded and the grades posted.

### **Americans with Disabilities Act (ADA) Policy Statement**

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or visit [disability.tamu.edu](http://disability.tamu.edu). Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

### **Academic Integrity Statement and Policy**

“An Aggie does not lie, cheat or steal, or tolerate those who do.”

“Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one’s work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case” ([Section 20.1.2.3, Student Rule 20](#)).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at [aggiehonor.tamu.edu](http://aggiehonor.tamu.edu).

### **Title IX and Statement on Limits to Confidentiality**

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see [University Rule 08.01.01.M1](#)):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, you will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with [Counseling and Psychological Services](#) (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's [Title IX webpage](#).

### **Statement on Mental Health and Wellness**

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in healthy self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at [suicidepreventionlifeline.org](http://suicidepreventionlifeline.org).

(Schedule follows on next page)

## Course Topics and Tentative Schedule

Chapters and page numbers refer to the *Fundamentals of Biogeography* textbook. Other reading assignments (e.g., journal articles, book chapters) are available through the TAMU Libraries' Course Reserves.

The Quizzes and Landscape Interpretations listed below can be found and submitted through Canvas. The Exams and Biogeographical Explorations will be handed out in class. Four additional Quizzes will also be handed out in class.

### I. BIOGEOGRAPHIC PATTERNS AND PROCESSES

Week 1 (Jan 13-17): Introduction to the course and the field of biogeography

Week 2 (Jan 20-24): Introduction to biogeographic patterns

Two complementary approaches to understand biogeographic distributions (ecological and historical); examination of some common biogeographical patterns

- Read Ch. 1 & 4
- Complete Quiz 1 (due Wed at 8:00 am)
- Submit Landscape Interpretation A (due Sat at 11:59 pm)

NOTE: Monday, January 20 is a university holiday. Classes do not meet.

### II. BIOGEOGRAPHIC CONCEPTS

Week 3 (Jan 27-31): The historical emergence of species and biogeographic distributions I

Species and lineages of organisms—how they arise, how organisms disperse over the earth's surface, and how they go extinct

- Read Ch. 2 & 3
- Complete Quiz 2 (due Mon at 8:00 am)

Week 4 (Feb 3-7): The historical emergence of species and biogeographic distributions II

The phenomenon of provincialism (the grouping of endemic taxa) and its meaning; reconstructing lineages of plants and animals in relation to geographic areas; an overview of the history of biota through earth history; the dramatic environmental and biogeographic changes of relatively recent earth history, i.e., the Tertiary Period (aka the Paleogene and Neogene Periods) and the Quaternary Period; regional reconstructions of Quaternary biome distributions; extinctions of large mammals during the Quaternary Period

- Read Ch. 14, 15, & 16
- Complete Quiz 3 (due Mon at 8:00 am)
- Submit Landscape Interpretation B (due Sat at 11:59 pm)



#### Week 5 (Feb 10-14): Abiotic and biotic controls on species distribution and population maintenance I

Interactions of plants and animals with their abiotic environment, and implications for species distributions; the niche concept; populations and how they are maintained through different life history strategies

- Read Ch. 5 & 10
- Complete Quiz 4 (due Mon at 8:00 am)
- Biogeography Exploration 1

#### Week 6 (Feb 17-21): Abiotic and biotic controls on species distribution and population maintenance II

Interactions of plants and animals with their abiotic environment, and implications for species distributions; the niche concept; populations and how they are maintained through different life history strategies

- No additional reading or quiz this week
- Exam 1, Friday Feb 21. Exam 1 covers material considered in weeks 1-5.

#### Week 7 (Feb 24-28): Abiotic and biotic controls on species distribution and population maintenance III

How species distributions are influenced by dispersal and by interactions with other species; some conservation implications

- Read Ch. 11 & 17
- Complete Quiz 5 (due Mon at 8:00 am)
- Submit Landscape Interpretation C (due Sat at 11:59 pm)

#### Week 8 (Mar 3-7): Communities, biomes, and their arrangement over the earth

Defining vegetation types, communities, and biomes; their spatial distribution; the origin of biomes; patterns and causes of ecological succession; imprints of human land use on vegetation patterns

- Read Ch. 13
- Complete Quiz 6 (due Mon at 8:00 am)

#### Spring Break (Mar 10-14)

#### Week 9 (Mar 17-21): Ecosystem geography

The community and climax concepts questioned; ecosystems as an alternative concept for understanding the earth's biota; spatial arrangement of ecosystems

- Read Ch. 12 (pp. 217-239 only)
- Complete Quiz 7 (due Mon at 8:00 am)
- Biogeography Exploration 2

### III. BIOGEOGRAPHIC PATTERNING OVER MULTIPLE SPATIAL SCALES

#### Week 10 (Mar 24-28): Climate and biogeographic distributions

How biomes are distributed along major climatic gradients

- Read Ch. 6
- Complete Quiz 8 (due Mon at 8:00 am)
- Submit Landscape Interpretation D (due Sat at 11:59 pm)

#### Week 11 (Mar 31-Apr 4): Substrate, terrain, and landscape patterns

How vegetation distributions are affected by substrate and topographic variations; landscape patterns and key concepts in landscape ecology

- Read Ch. 7, 8, & 12 (pp. 239-246 only)
- Complete Quiz 9 (due Mon at 8:00 am)
- Exam 2, Friday, April 4. Exam 2 covers all material covered through week 10 but focuses primarily on the material of weeks 6–10.

#### Week 12 (Apr 7-11): Disturbances and biogeographic patterns over continents and landscapes

The influence of fires, windstorms, and other disturbances on the distribution of organisms at multiple scales

- Read Ch. 9
- Complete Quiz 10 (due Wed at 8:00 am)

#### Week 13 (Apr 14-18): Disturbances and biogeographic patterns, cont'd.

Previous week's topic continued

- No new reading assignment or quiz this week

NOTE: Friday April 18 is a Reading Day. Classes do not meet.

#### Week 14 (Apr 21-25): People and biogeographic patterns

Human impacts on ecological communities and biogeographic distributions; some conservation issues related to communities, ecosystems, and landscapes.

- Read Ch. 18
- Complete Quiz 11 (due Mon at 8:00 am)
- Biogeography Exploration 3
- Submit Landscape Interpretation E (due Sat at 11:59 pm)

Week 15 (Apr 28-29): Biodiversity patterns

NOTE: Tues, April 29 is a Redefined Day. Students attend Friday classes, so this will be our last day of class. (Wed, April 30 is a Reading Day).

General spatial patterns of biological diversity and some attempts to understand them

- Read Ch. 12 (pp. 248-252 only)
- Complete Quiz 12 (due Mon at 8:00 am)

Final exam week

- Exam 3 during the final exam period, Thurs, May 1 at 10 am–noon in our regular classroom. Exam 3 is comprehensive but focuses primarily on the material considered in weeks 11-15.