**Biogeography**

Our goal in this course is to understand the spatial patterns of plant and animal distributions. To achieve this goal, we will examine the historical (*speciation, migration, dispersal*), environmental (*climate, soils, topography*) and biotic (*competition, resource partitioning*) influences behind these patterns. We will also explore the role of disturbance as a shaper of biological communities. Along the way, you will be introduced to field, laboratory and statistical means of analyzing ecological data. As you develop an understanding of how and why biological diversity varies over the surface of the Earth, you can appreciate the role of human activities in altering biogeographic patterns.

**Readings:**
Copies of the readings (pdf format) will be placed on Blackboard. These will be drawn primarily from two textbooks:


Supplemental readings may be added during the semester.

**Grading:**
- There will be two exams: a midterm and a non-cumulative final, each worth 100 points. The format of the exams will be primarily short essay, but will also include terminology identification, and definitional fill-ins.
- In addition to exams, students will write a scientific research paper, also worth 100 points, based on a class field experience focused on Hemlock Woolly Adelgid, an invasive pest recently established in Ohio. Guidelines are provided in a separate handout.
- Finally, 7-8 activities and assignments (mostly in-class and worth 5 points) will contribute a small percentage to your final grade. **Note: these are intended as in-class activities, and make-ups are not permitted unless you have prior permission from me, or a validated excuse for your absence. Barring extraordinary circumstances, students need to contact me about missed activities before the next class period.**
- **Graduate students** will respond to an additional question on the final exam based on supplemental readings. They will be held to a higher standard on exams and with their written assignments, and also will be required to synthesize more literature (number of references) for their paper.
- It is a good practice for all students to save graded and returned assignments until final course grades are assigned.

**Grading scale:**

| Grade | A | A- | B+ | B  | B- | C+ | C  | C- | D+ | D  | D- | F
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<tr>
<td>Points</td>
<td>93-100%</td>
<td>90-92</td>
<td>87-89</td>
<td>83-86</td>
<td>80-82</td>
<td>77-79</td>
<td>73-76</td>
<td>70-72</td>
<td>67-69</td>
<td>63-66</td>
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*Students having any special needs or disability that might affect their performance in this class are encouraged to speak to me at the start of the quarter to discuss necessary arrangements.*
Academic dishonesty will not be tolerated. Anyone caught cheating on exams, or who submits exercises prepared totally or in part by another, will receive a zero for the assignment. Plagiarism (presenting the ideas or the writing of someone else as your own) on your papers will result in a grade of “F” for the course. All incidents of academic dishonesty also may be reported to the Office of Community Standards and Student Responsibility for further action. (Students may appeal any academic sanctions through the grade appeal process.) For an elaboration on what constitutes academic misconduct, refer to the Student Code of Conduct: https://www.ohio.edu/student-affairs/community-standards/students/student-code-of-conduct.

Course Expectations

Instructor:
- Listen and respond to student questions and concerns
- Have reasonable demands on work outside of class time
- Be available for assistance outside of class time
- Apply consistent and fair grading criteria
- Provide useful and timely feedback on student work
- Through the presentation of material and activities, provide an atmosphere that facilitates learning, critical thinking, and intellectual growth

Student:
- Show up to class and be on time
- Complete assignments
- Ask the instructor to clarify material that is unclear
- Monitor your e-mail for correspondence related to the course, and respond as necessary in a timely manner
- Work to your potential, and turn in your best work.

Seventy percent of success in life is showing up - Woody Allen. Attendance is expected. Although not a basis for student grades, good attendance is essential for success in this class. (It is essential to earn credit for in-class activities.) If any topic is unclear after lecture, please do not hesitate to see me as soon as possible, individually or in a group. Feel free to e-mail me with questions as well. Please note, I do not give out copies of my lecture notes. If you miss class, you will need to get notes from a fellow student. You are encouraged to contact me before the next class so that I can tell you what we covered.

Classroom etiquette: It is disruptive to arrive late, or to get up and leave while class is still in session. If for some reason you can’t get to class on time or must leave early, please inform me beforehand. Unless special arrangements are made with me in advance, laptop computers are not permitted during class. Focus on this class for 55 minutes: turn off your cell phones and stow them away during class.
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<th>Week:</th>
<th>Topic:</th>
<th>Readings:</th>
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<td><strong>TENTATIVE LECTURE AND READING SCHEDULE (Subject to change)</strong></td>
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<td><strong>I. HISTORICAL BIOGEOGRAPHY: Broad Spatial Scales &amp; Long Time Frames</strong></td>
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| Week 1     | Introductions. Course overview. **Evolution, natural selection, speciation & extinction** | L – Chapter 1  
Background: M – Chapter 2, pp. 9-22  
M – Chapter 9 |
| Jan 13/15/17 | No Class Monday: MLK Holiday. More on speciation & extinction; endemism | M – Chapter 8 |
| Week 3     | Biogeographical dispersal & distributions; **Paleobiogeography:** continental drifting, climate change, and biogeographical regions | [no new readings] |
| Jan 27/29/31 | “Paleobiogeography:” continental drifting, climate change, and biogeographical regions | L – Chapter 8, pp. 243-257†;  
M – Chapter 10 |
| Week 5     | Biogeographic patterns in the Quaternary **II. ECOLOGICAL BIOGEOGRAPHY: Interactions between species and their environments, now and in the recent past**  
Saturday (2/15) Field Trip to Jackson County. | L – Chapter 9 |
| Feb 10/12/14 | Limiting Factors & controls on species ranges. The physical environment (macro- and microclimate); environmental gradients. | L – Chapter 4, pp. 71-90  
Background: M – Chapter 2, pp. 22-35 |
| Week 6     | Ordination. **Ordination** | [no new readings] |
| Feb 17/19/21 | Soils. **Friday (3/6): Midterm Exam (everything prior to soils)** | [continue previous readings] |
| Week 7     | Biotic interactions (the role of competition in zoogeography) | L – Chapter 4, pp. 92-100 |
| Mar 9-13   | Succession | M – Chapter 5  
Graduate students: Sprugel, *What is natural?* |
| Week 10    | Changes to the Eastern Deciduous Forest since settlement | [no new readings] |
| Mar 23/25/27 | **III. BIOGEOGRAPHY, CONSERVATION, AND LANDSCAPE ECOLOGY**  
Island Biogeography Theory & beyond | M – Chapter 14, pp. 428-447 |
| Week 11    | Climate change | Swanston et al. 2018 |
| Mar-Apr 30/1/3 | No Class Wednesday & Friday – AAG (Geography) conference | Graduate students: McEwan et al., *Multiple interacting drivers* |
| Week 12    | Final papers due Friday (4/24) |           |
| Week 13    | Swanston et al. 2018 |           |
| Week 14    | Swanston et al. 2018 |           |

†Lomolino’s Chapter 8 provides extensive background on the history and mechanisms of plate tectonics, and you are encouraged to read these sections briefly for background. The assigned reading focuses more on the past configurations of the continents.

**FINAL EXAM: Friday, May 1st 1-3 PM**

*This is the next-to-last exam slot. Do not make plans to leave Athens before the exam!*