

GEO401: Geography of Plants of North America

Syllabus

Fall 2015 (3 credits)
Tu/Th 2:40 – 4:00 pm
Geography Building Rm 126

Instructor

Dr. Kyla M. Dahlin,
Department of Geography

Contact

kdahlin@msu.edu
517.353.9739

Office Location & Hours

Geography Building Rm 122
Office hours: Monday 1-3 pm
or by appointment

1 General Information

1.1 Description

This class explores the patterns of plant distributions around North America with a focus on ecological patterns, biogeographical theory, plant-atmosphere interactions and predictive models of plant distributions. The class will be divided into three sections: (1) An introduction to biogeography; (2) a tour of North American ecosystems; and (3) Quantitative biogeography. This course will also emphasize essential 'soft' skills: reading and understanding the primary literature, performing simple data analyses, writing clearly and concisely, and presenting one's work in an engaging manner.

1.1.1 Prerequisites: none

1.1.2 Evaluation: Students will be evaluated by two presentations, a quantitative assignment (final paper), short homework assignments related to readings, and two exams.

1.1.3 On D2L: FS15-GEO-401-001 - Geog Plants Nth America

2 Course Materials

2.1 Required Reading

Book: MacDonald, GM. (2001) *Biogeography: Space, Time, & Life*. New York, NY: John Wiley & Sons. (available at the bookstore, 1 copy on 24 hr reserve at the Main Library (available at the 1st floor circulation desk 24 hr/day Sunday @ 10 am – Friday 10 pm, Sat 10 am – 6 pm), or online – there's only one edition, so don't hesitate to get a used copy!)

Also, note that we're only reading chapters 1-6 and 14 & 15. And chapters 1-7 are available online! Go to www.wiley.com, search for 'biogeography macdonald' then when you find it click on 'For Students > Companion Sites > Visit Companion Site' then you can 'Browse by Chapter' and you can open PDFs of each chapter.

Peer Reviewed Literature: (posted on D2L, readings may be added or changed)

Bachelet D, et al. (2008) VEMAP vs. VINCERA: A DGVM sensitivity to differences in climate scenarios. *Global and Planetary Change*. 64: 38-48.

- Good SP & KK Caylor (2011) Climatological determinants of woody cover in Africa. *Proceedings of the National Academy of Sciences USA*. 108(12): 4902-4907.
- Groffman PM, et al. (2012) Long-term integrated studies show complex and surprising effects of climate change in the northern hardwood forest. *BioScience*. 62(12): 1056-1066.
- McKenney DW, et al. (2007) Potential impacts of climate change on the distribution of North American trees. *BioScience*. 57(11): 939-948.
- Transeau EN (1935) The prairie peninsula. *Ecology*. 16:3(423-437)
- Tucker CJ, Townshend JRG & TE Goff (1985) African land-cover classification using satellite data. *Science* 227(4685): 369-375.

2.2 Recommended Reading

Beerling, D. (2007) *The Emerald Planet*. Oxford University Press, Oxford, UK. pp. 312

If you really like plants, this is the book for you. Pretty focused on paleo-ecology, but amazing. This book also served as the inspiration for the 'How to Grow a Planet' movies.

Mann, CC (2006) *1491: New revelations of the Americas before Columbus*. Vintage Books. pp 541

This is an excellent exploration of the Western Hemisphere before European contact. It's fairly human-focused, but there are lots of stories of/related to ecology.

Schimel, D (2013) *Climate and Ecosystems*. Princeton University Press. pp 240

This book is from a series called "Princeton Primers in Climate" that explore different aspects of biosphere-atmosphere (etc.) interactions. This one is a bit technical (there are equations) but it's a great introduction to how plants influence and are influenced by the climate.

Quammen, David (1997) *Song of the Dodo*. Scribner. pp 704

This book is basically required reading for any introductory biogeography course. It's too animal focused for our purposes, but it's great!

3 Course Policies

3.1 Email

If you have questions or issues, please contact me! Students should not expect immediate responses to email messages, however, if you don't receive a response within 48 hours please email again or talk to me before or after class. Please include "GEO401" in the subject line of your email for a faster response.

3.2 Sending Attachments

Homework assignments in this class will be turned in via D2L. Download the file from D2L, alter the name of it to represent you, then answer the included questions. Ideally the filename would look something like GEO401_lastname_firstname_assignment#_YYYYMMDD.docx. Completed assignments should be uploaded as MS Word documents (.docx), PDFs (.pdf), or, if all else fails, raw text documents (.txt). If files are received "corrupted" or with other issues, the onus is on you to correct this problem, and if it isn't dealt with promptly it will be considered late. If something

goes wrong on D2L, just email the file to me. My preference is for D2L, but don't skip it all together and risk having a late (and therefore 0) assignment.

3.3 Electronics in Class

Laptops and cellphones are permitted in class, in fact, we'll use laptops quite a bit (though you are not required to have one), however, if they become a distraction to other students the instructor may ask you to put them away. If you are working on a laptop during class the instructor reserves the right to ask you to look up concepts/definitions and share them with the class as relevant. We'll take a 5-10 minute break in the middle of each class so you may attend to whatever you need, including Facebook posts, etc.

3.4 Academic Honesty

Article 2.3.3 of the [Academic Freedom Report](#) states that "The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards." In addition, Dr. Dahlin adheres to the policies on academic honesty as specified in General Student Regulations 1.0, Protection of Scholarship and Grades; the all-University Policy on Integrity of Scholarship and Grades; and Ordinance 17.00, Examinations. (See [Spartan Life: Student Handbook and Resource Guide](#)) Therefore, unless authorized by your instructor, you are expected to complete all course assignments, including homework, lab work, quizzes, tests and exams, without assistance from any source. You are expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Also, you are not authorized to use the www.allmsu.com web site to complete any course work in this course. Students who violate MSU academic integrity rules may receive a penalty grade, including a failing grade on the assignment or in the course. Contact your instructor if you are unsure about the appropriateness of your course work. (See also the [Academic Integrity](#) webpage.)

The first assignment for this class will be to complete a plagiarism tutorial, so that should help clarify any questions about what constitutes appropriate citations of others' work. When in doubt, ask or look it up!

3.5 Accommodations for Students with Disabilities

Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at rcpd.msu.edu. Once your eligibility for an accommodation has been determined, you will be issued a Verified Individual Services Accommodation ("VISA") form. Please present this form to me at the start of the term and/or two weeks prior to the accommodation date (test, project, etc.). Requests received after this date may not be honored.

If you have an issue not directly covered by the RCPD, please contact me and I'll try to accommodate your needs.

3.6 Diversity

In order to learn, we must be open to the views of people different than ourselves. Each and every voice in the classroom is important and brings with it a wealth of experiences, values and beliefs. In this time we share together over the semester, please honor the uniqueness of your fellow classmates, and appreciate the opportunity we have to learn from each other. Please respect your

fellow students' opinions and refrain from personal attacks or demeaning comments of any kind. Finally, remember to keep confidential all issues of a personal or professional nature that are discussed in class.

3.7 Attendance & Participation

Students are expected to attend the majority of class meetings, to show up on time, and to contribute intellectually to the class by asking questions and sharing thoughts and opinions. While I won't take strict attendance, this is a small class, so your absence will be noticed. Five of the 10 participation points listed under grading will be awarded based on the above criteria. The other 5 will be awarded if you simply come to my office hours once throughout the semester **BEFORE THANKSGIVING**.

Students whose names do not appear on the official class list for this course may not attend this class without permission of the instructor. Students who fail to attend the first four class sessions or class by the fifth day of the semester, whichever occurs first, may be dropped from the course. If you anticipate that you will have to miss class for any reason, please discuss this absence with the instructor at least a week in advance. If you miss an exam you will be expected to provide proof of a legitimate emergency before a makeup is allowed. Students seeking a grief absence should be directed to the Grief Absence Request Form found on the RO home page (<https://reg.msu.edu/>) under 'Student Services - Grief Absence Request Form' OR to StuInfo (<https://stuinfo.msu.edu/>) under 'Academics - Enrollment Information and Services - Grief Absence Request Form.' If a grief absence is approved, accommodations will be made. **Late assignments will not be accepted.**

3.8 Collaboration

Collaboration **IN CLASS** outside of exams is encouraged. We will do a number of activities in class where your active participation and interaction with others will, in fact, be required. However, all work done outside of the classroom should be your own. Written assignments, computer code (modified from what I supply), and exams should represent your own independent work. If you need help on an assignment, contact the instructor, not your fellow classmates.

3.9 Social Media

Yep, I'm on twitter (@bristleweed & @ERSAM_Lab), LinkedIn, ResearchGate, and a few other social media type things. You're welcome to follow me, of course (I tweet 90% work/science related stuff), but with very few exceptions I will not follow/friend/link back to you. Please do not take this personally, I just don't want to know what you had for dinner, how hard your other classes are, or whatever other personal stuff is going on in your life that isn't related to plants or geography.

3.10 Emergencies

In the event of an emergency, our primary goal will be to stay safe. There is a wide variety of situations we could potentially face as a class, so please be prepared to stay calm, and never hesitate to interrupt the instructor if something seems awry.

4 Course Schedule

The following lecture schedule remains subject to change and last minute modifications. If significant changes do occur, students will be notified and an updated syllabus will be posted on D2L. A note on workload - this is a 3 credit course. Assuming the average MSU full-time student

takes 15 credits per semester and is expected to work ~40 hours per week total, then this course should take about 8 hours per week ((3/15) x 40). Since ~3 hours per week of that is spent in class, that means you should be spending around 5 hours per week in addition to class time on this class. If you're doing significantly less, you may find your test and assignment scores reflect that. If you're doing significantly more, please come talk to me. I want this class to be challenging, not burdensome.

All written assignments are due 15 minutes BEFORE class on the due date (so at 2:25 pm).

Date	Wk	Day	Topic	Assignment Due	Reading
3-Sep	1	Th	Introductions & Assessment Quiz		--
8-Sep	2	Tu	Biology review or *field trip*	Plagiarism Tutorial Confirmation #	Ch 1 & 2
10-Sep	2	Th	Biology review or *field trip*		Ch 2
15-Sep	3	Tu	Physical Geography	Assignment 1. Questions on Ch. 1 & 2	Ch 3
17-Sep	3	Th	Interactions & Disturbance		Ch 4 & 5
22-Sep	4	Tu	Ecological Communities	Assignment 2. Questions on Ch. 3-5	Ch 6
24-Sep	4	Th	Biodiversity & movie		Ch 14
29-Sep	5	Tu	Conservation	Assignment 3. Questions on Ch. 6 & 14	Ch 15
1-Oct	5	Th	Exam Review	bring questions re: exam!	
6-Oct	6	Tu	EXAM #1		
8-Oct	6	Th	Prof. Kelly Caylor lecture (EEBB)! Discuss reading beforehand		Good & Caylor 2011
13-Oct	7	Tu	Guest Lecture – Dr. Nina Lany	Assignment 4. Reading summary	Groffman et al 2012
15-Oct	7	Th	Begin tour of North America - overview		
20-Oct	8	Tu	Tour of North America	Assignment 5. Reading summary	Transeau 1935
22-Oct	8	Th	Tour of North America		
27-Oct	9	Tu	Tour of North America	Assignment 6. Reading summary	Bachelet et al 2008
29-Oct	9	Th	Tour of North America (w/ student presentations)		
3-Nov	10	Tu	Exam Review	bring questions re: exam!	
5-Nov	10	Th	EXAM #2		
10-Nov	11	Tu	Intro to class project & SDM	Assignment 7. Reading summary	McKenney et al 2007
12-Nov	11	Th	Intro to R & Project Description	Install R & RStudio by today	
17-Nov	12	Tu	Project time in class		
19-Nov	12	Th	Project time in class		
24-Nov	13	Tu	Kyla's Research Lecture	Preliminary maps due (not graded)	
26-Nov	13	Th	THANKSGIVING! Have fun & stay safe!		
1-Dec	14	Tu	Looking beyond North America 1	Assignment 8. Reading summary	Tucker et al 1985
3-Dec	14	Th	Guest Lecture – Dr. Catherine Yansa		
8-Dec	15	Tu	In Class Presentations		

Date	Wk	Day	Topic	Assignment Due	Reading
10-Dec	15	Th	Wrap up, discussion & evaluations		
15-Dec	16	Tu	NO MEETING	Quantitative Project write up DUE @ noon	

5 Evaluation

5.1 Plagiarism Assignment

Please go to <https://www.indiana.edu/~istd/test.html> and complete this tutorial on plagiarism (if you're a grad student, please take the grad student test). These are actually really helpful! Enter the supplied ID/confirmation number provided on your certificate in the 'quiz' on D2L to confirm that you've passed the test. Note that this could take an hour or more, so plan accordingly. Due 15 minutes before the start of class on the due date. This does require you to register and enter an email address. If this makes you uncomfortable, feel free to set up a fake email address and use that, but please use your real name in the registration so I can see that you completed it.

5.2 Exams

Each of the two midterm exams will be cumulative (i.e. concepts from the first third of the class could be on the second exam). Exam questions may come from lectures, class discussions, and readings, though the focus will be on understanding concepts, not memorizing facts and statistics. Exams will primarily use short-answer questions, but some other question types may be incorporated. There will be no final exam for this course.

5.3 North America Presentation

Each student will be assigned a biome of North America to give a SHORT (~6 minutes) presentation on. The emphasis of this assignment will be on the presentation itself (slides and speaking), as there will be no other materials collected for this assignment. Grading details will be provided when the assignment is discussed in class.

5.4 Quantitative Project

Students will produce a 6-8 page (double spaced, 12 pt font, references and figures do not count towards the page requirement) paper based on the class project we do towards the end of the semester. You will be given very specific guidance about the write up, and the bulk of the data analysis will be done in class. On 12/8 each student will present their project results in a ~10 minute presentation. Papers, due at noon on 12/15, will be written like mini-research papers with appropriate references as necessary.

5.5 Assignments & Reading Summaries

All of the assigned readings will have some sort of 'product' associated with them (details posted on D2L). These should not be time consuming activities, but will help you identify key points in the readings or chapters and come to class prepared for discussions. You'll notice that there are eight assignments in the schedule, but only five listed under "Grading" - this means you can either skip any three of the assignments, or do them to earn extra credit. Reading summaries **will not be accepted late no matter what**, however (i.e. if you're 2 points away from a higher grade at the end of the semester you can't add a summary to up your grade then. So think ahead!)

5.6 Field Trip (optional)

If there is enough interest we will go on a Saturday field trip to a site within about an hour of campus to look at some of the vegetation types in southern Michigan.

5.7 Participation

(same as section 3.7) Students are expected to attend the majority of class meetings, to show up on time, and to contribute intellectually to the class by asking questions and sharing thoughts and opinions. While I won't take strict attendance, this is a small class, so your absence will be noticed. Five of the 10 participation points listed under grading will be awarded based on the above criteria. The other 5 will be awarded if you simply come to my office hours once throughout the semester **BEFORE THANKSGIVING.**

6 Grading

Assignment	Points	Final Grade Scale	
Plagiarism assignment	10	450 - 500	4.0
In class assignments (5 x 20 pts)	100	420-449	3.5
Presentation (North America)	40	390-419	3.0
Presentation (Quantitative Project)	40	350 - 389	2.5
Participation	10	320 - 349	2.0
Quantitative Project	100	290 - 319	1.5
Exam 1	100	260 - 289	1.0
Exam 2	100	< 360	0
TOTAL	500		