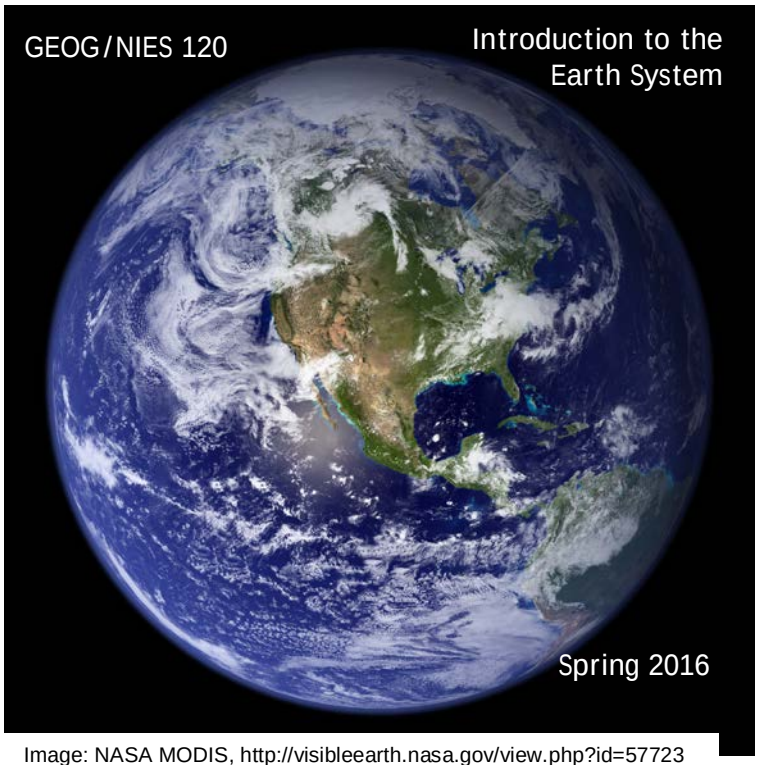

Image: NASA MODIS, http://visibleearth.nasa.gov/view.php?id=57723

Welcome to the Earth System. The Earth is the place where we live, the water that we drink, the air that we breathe, and the home to all known life in the universe. The earth is a ***system***, composed of many interacting subsystems: the atmosphere, hydrosphere, biosphere, geosphere, and anthrosphere. The earth is ***dynamic.*** We live in a swiftly changing world, characterized by rapidly changing climates, shifting landscapes, and growing human populations. Now, more than ever, it's essential to understand how the Earth system works, how it affects our livelihoods, and how we are altering the physical environment of our planet.

Geography/NIES 120 provides a critical foundation for students by introducing them to how the Earth system works and what makes Earth livable. Through this course you will gain a deeper appreciation for the diverse processes that shape our local, regional and global landscapes. Many students take this course to fulfill their physical science requirement. Others use it as a gateway to majors and careers in Geography, Environmental Studies, and Environmental Science.

INSTRUCTORS

Professor Jack Williams, 207 Science Hall (1st half of the semester), jww@geography.wisc.edu
Twitter: *@IceAgeEcologist* Office Hours: Tuesday 4-5pm, Thursday 2:30-3:45pm, or by appointment.
Professor Erika Marin-Spiotta, 223 Science Hall (2nd half of the semester), marinspiotta@wisc.edu
Office Hours: TBA and by appointment

TEACHING ASSISTANTS: **Laura Szymanski (head TA)** and **Kevin Burke**. See the Discussion Syllabus for their office hours and contact information.

FORMAT: Lecture 2 hours per week and discussion section 1 hour per week. Discussion sections elaborate the principal points of class lectures and discuss topics of student interest related to lecture material.

LECTURES: Lecture Section 11-11:50am, Sewell Social Sciences, room 5208
We are using lecture capture technology this semester and plan to record all lectures. We plan to post recorded lectures via Learn@UW, but caution that this technology is not 100% reliable and should be considered a backup, not a primary means of getting the lecture material.

CREDITS: 3 credits in physical science.

TEXT: *Physical Geography, 4th edition*, De Blij et al., 2013, Oxford University Press
Geosystems, 8th Edition, Christopherson, 2012, Prentice-Hall (Chapters 10 & 20 only. These two chapters will be posted to Learn@UW.)

EXAMINATIONS: Four 50-minute in-class examinations will be given at roughly 4-week intervals. The last exam will be on the last day of instruction. Each exam will stress the material covered since the previous exam. There is no final comprehensive exam during the end-of-semester examination week.

GRADING: The final grade will be determined from a curve of cumulative points achieved on the class examinations and the discussion section. Each class exam will be worth approximately 30 points and the discussion section grade will count for 50 points. Discussion section points will be earned from worksheets and activities described on the syllabus provided by the TAs at the first section meeting.

The potential total number of points for the course is 170. The setting of the curve varies from year to year, and is based upon the grades for all students in the current semester. The median grade is a B.

DISCUSSION: Discussion section points are based on attendance (*which is mandatory*), in-class exercises and discussion participation and comprise 30% of your total grade. The schedule of discussion activities will be handed out in section. **NOTE**: Discussion sections will not meet until the week of September 14, the first full week of instruction.

PREREQUISITES: There are no prerequisite courses for this class, but students are expected to be geographically literate. You should know the location of the world's continents and oceans, the location of the 50 states and be able to read latitude and longitude on a map. Much of this information is included in the first two chapters of your textbook or in any student atlas.

HONORS: If you are registered for honors, please contact your TA early in the semester to discuss the project. The Honors projects are administered by the TAs.

EXTRA CREDIT: Extra credit is not offered.

ATTENDANCE: Attendance at class lectures is your responsibility; however, students who regularly come to class, take good notes and ask questions have greater success. We welcome questions and discussion during and after lecture.

ACADEMIC MISCONDUCT: Instances of plagiarism, cheating, and other forms of academic misconduct have serious consequences for the students involved. To avoid any possibility of misunderstanding, you are strongly encouraged to consult the campus academic integrity web page: students.wisc.edu/doso/acadintegrity.html. The documents referenced by this page contain explanations of what constitutes misconduct and related policies and procedures.

ONLINE RESOURCES: learnuw.wisc.edu/ *Password-protected course materials, including 1)* **News***, used by the instructors for class announcements, 2)* **Content***, where the instructors post materials for download, 3)* **Discussion***, containing bulletin boards for student questions and feedback, and 4)* **Grades***.*

ADDITIONAL RESOURCES FOR STUDENTS:

- McBurney Disability Resource Center. We are happy to work with students who need additional accommodations. http://www.mcburney.wisc.edu/
- Multicultural Student Center. The MSC exists to make sure students of all backgrounds are successful at UW. https://msc.wisc.edu
- GUTS (Greater University Tutoring Service) tutoring. See their homepage to inquire about individual tutors/general tutoring sessions. http://guts.studentorg.wisc.edu/
- UW Writing Center. See their website for information about drop-in or scheduled appointments with expert writers. They will help with just about any type of writing assignments/needs. http://www.writing.wisc.edu/
- L&S Student and Academic Affairs. See their website for issues regarding medical absences and other emergencies that may affect your ability to attend courses and complete coursework. http://saa.ls.wisc.edu

LECTURE SCHEDULE Spring 2016:

Week 1	W	Jan	20	1) Introduction to Geography and Earth System Science, *Units 1-3*[1,2]
Week 2	M		25	2) EMR, Earth-Sun Fundamentals, *Unit 4, What If: Sunless Earth?* https://what-if.xkcd.com/49/
	W		27	3) Atmosphere Fundamentals, Composition, Structure, *Unit 6 + pp94-95, What If: Rising Steadily?* https://what-if.xkcd.com/64/
Week 3	M	Feb	01	4) Earth's Energy Cycle, Unit 5
	W		03	5) Earth's Energy Cycle and Temperature, *Units 5, 7*
Week 4	M		08	6) Atmospheric Forces and Motion, *Unit 8, What If: Global Windstorm?* http://on.mash.to/1tzdktj
	W		10	7) Atmospheric Moisture and Stability, *Unit 11 + pp84-86, What If: Raindrop:* https://what-if.xkcd.com/12/
Week 5	M		15	8) ***** FIRST EXAM *****
	W		17	9) Atmospheric Circulation, *Unit 9*
Week 6	M		22	10) Weather, Fronts, and Mid-latitude Cyclones, *Units 12, 13*
	W		24	11) Ocean Structure and Circulation, *Unit 10, What If: Drain the Oceans.* https://what-if.xkcd.com/53/
Week 7	M		29	12) Water Cycle and Water Resources, *Units 11, 38*
	W	Mar	02	13) Global Climates and Biomes, *Christopherson Chapters 10, 20*
Week 8	M		07	14) Global Climate Change, *Units 18,19*
	W		09	15) ***** SECOND EXAM *****
Week 9	M		14	16) Human Effects on Global Biogeochemical Cycles, *Unit 20(p. 250-251 only), Unit 24 (p. 286-289* and *Focus on the Science Box p. 292)*
	W		16	17) Soil Systems & Soil Forming Environments, *Units 21-23*

Spring Recess: March 21 - 25

Week 10	M		28	18) Characteristics of Earth's Surface and Interior, *Units 27-29*
	W		30	19) Characteristics of Earth's Surface and Interior, *Units 27-29*
Week 11	M	April	04	20) Earth's Tectonic Systems, *Units 30-31*
	W		06	21) Volcanic and Earthquake Hazards, *Units 32-34*
Week 12	M		11	22) ***** THIRD EXAM *****
	W		13	23) Weathering Processes, *Units 35, 36, 42*
Week 13	M		18	24) Mass-Movement Processes and Hazards, *Units 36, 37*
	W		20	25) Fluvial Erosion and River Processes, *Units 38-41*
Week 14	M		25	26) Arid Systems, *Units 35, 40, 41*
	W		27	27) Glacier Landforms and Sediments, *Units 43-45*
Week 15	M	May	02	28) Responses of Glacier Systems to Climate Change, *Units 46, 18, 19*
	W		04	29) ***** FOURTH EXAM *****

[1]Unit 1 will be covered in lecture – you are expected to read Units 2-3 on your own and be responsible for this material.
[2] 'Units' always refers to readings from the de Blij textbook