GES 433
Sustainability, Land Use and Natural Resources
Fall 2018

Instructor: Matthew Fagan
Time/Classroom: Monday/Wednesday, 11:30-12:45 pm, Sherman Hall 015.
NOTE: We will meet in Sondheim basement (the Cart Lab, across from Sondheim 007) most days.
Office: 211-J Sondheim Hall
Extension: x3149
E-mail: mfagan@umbc.edu
Office hours: T 1:00 – 2:30 pm, W 10:30 – 12:00 pm, or by Appointment

Two Required Texts (both are available in print or ebook):
PS: Matson, P. Clark, W., and Andersson, K. (2016). *Pursuing Sustainability: A Guide to the Science and Practice*. Princeton, NJ: Princeton University Press.
BR: DeFries, R. (2014). *The Big Ratchet: How Humanity Thrives in the Face of Natural Crisis*. Basic Books.

Summary: Our landscapes are the living representation of our modern civilization, and represent the choices we make between agriculture, industry, conservation, and development. This class will explore the scientific underpinnings of the idea of sustainable development, and examine the theory and practice of sustainability as applied to natural resources. Examples and case studies will be drawn from diverse land-use systems, focusing on the policy challenge of achieving both conservation and poverty alleviation. Students will conduct quantitative and policy assessments of actual developing landscapes, asking whether win-win scenarios for conservation and development are possible in mining, suburban development, deforestation frontiers, and agricultural expansion.

Class Attendance and Participation: Students are expected to attend all classes: attendance and participation will be graded. Class will begin **promptly** at 11:30 am. If for any reason you cannot attend on a particular day it is YOUR responsibility to obtain notes from your fellow students on the material covered, announcements, and assignments. In the rare event of an emergency, contact the instructor by email.

Lab Exercises: Lab responses are due into Blackboard at the beginning of class on the dates listed for each lab, unless otherwise stated by the professor. Late assignments will not receive full credit (-10% per day late). Note that GIS skills are not needed to complete the labs; students without GIS skills may need their neighbor's assistance for a few minutes at the start of a few labs.

Group Presentations, Mini-review: Groups (2-3 students) will select 2-3 papers on a mini-review topic and lead class on one day for a 25-minute presentation and 40-minute discussion. Topics will be selected in week 2. A final mini-review report on your topic is due in at the end of class, in lieu of a final exam.

Reading Responses: One page (600-700 word) reading responses are due before Thursday class each week; responses should summarize the reading, reflect on what you found interesting, and pose critical questions.

Course grading: Each category of assessment below will count as follows towards the total course grade:

Lab Exercises	35%
Reading Responses	25%
Class participation	10%
Group Presentations	20%
Written mini-review	10%

This class uses a standard grading curve: A = 90% and above, B = 80% - 89.9%, C = 70% - 79.9%, D = 60% - 69.9%, F 59.9% and below.

Cheating and plagiarism: Each student is expected to complete their own work. All lab and reading assignments are to be answered by each student individually. Any ***plagiarism*** during this course will result in an F grade, and appropriate disciplinary action. UMBC has a very specific code of conduct regarding cheating and plagiarism. For an online copy of the UMBC Undergraduate Student Academic Conduct Policy go to: https://oue.umbc.edu/ai/resources-for-students/

Draft Class Schedule (this is subject to change)

Date	Topic	Reading
Week of Aug 27		
Th	Course Introduction	Syllabus
	What is Sustainable Development?	PS Ch. 1
	The world has changed: the Great Acceleration (Big Ratchet)	BR Ch. 1-4
Week of Sep 3		
T	*Lab 1 – Perceptions of land-use and sustainability*	PS Ch. 2
Th	What is the well-being we care about?	
	Topic selection for Group Mini-reviews	
	Reading response for 8/27 due in	
Week of Sep 10		
T	"Natural capital", biodiversity, and ecosystem services	*Reforestation readings*
Th	*Lab 2 – Trade-offs in tropical reforestation*	
	Reading responses for 9/3 and 9/10 week due in	
Week of Sep 17		
T	*Lab 3 – Tradeoffs part 2, Follow-up discussion*	BR Ch. 5-10
Th	The Green Revolution! Feeding the world	
	Reading responses for week 9/17 due in	
Week of Sep 24		
T	Land sharing, sparing, and production	PS Appendix: Mexico & Nepal
Th	*Lab 4 – Coffee in Central America*	*Ag/coffee reading*
	Reading responses for week 9/24 due in (etc. each week)	
Week of Oct 1		
T	The landscape approach and socio-ecological systems	PS Chapter 3
	Lab 5 –Coal in Appalachia	PS Appendix: London & Montreal
	***Draft final group project proposals due in.**	
Week of Oct 8		
T	*Lab 6 – Common Pool Resource*	*Food readings*
Th	Finish Lab 6, discussion of complex systems.	*Tragedy of Commons*
Week of Oct 15		
T	*Lab 7 – Suburban expansion and impervious cover*	*Rubber readings*
Th	Example group presentation: Rubber	PS Chapter 4
Week of Oct 22		
T	Governance and natural resources: blessing or curse?	*Rice readings*
Th	Second group presentation: Rice	PS Chapter 5 p1

Week of Oct 29

T	Linking knowledge to action	*Oil Palm readings*
Th	Third group presentation: Oil Palm	PS Chapter 5 p2

Week of Nov 5

T	*Lab 8 – Deforestation and tropical frontiers*	*Soy readings*
Th	Fourth group presentation: Soy	Debate prep.
	Chapter 7.7-7.12	

Week of Nov 12

T	*Lab 9 – The Great Debate on Roads*	*Gold readings*
Th	Fifth group presentation: Gold	PS Appendix

Week of Nov 19

T	Sixth group presentation: Bananas	*Bananas readings*
Th	THANKSGIVING (Don't come to class)	Final discussion prep.

Week of Nov 26

T	Development and natural resources	*Chocolate readings*
Th	Seventh group presentation: Chocolate	Final discussion prep.

Week of Dec 3

T	Eighth group presentation: Beef	*Beef readings*
Th	Ninth group presentation: Plastic	*Plastic readings*

Week of Dec 10

T *Final discussion: the future of sustainability.*

Final mini-reviews due in by the end of finals (midnight, 12/19)

Starting Exercise:

What is sustainability? Give an example as well as a definition.

What is sustainable development? Why isn't most development sustainable?

What is land-sparing (as compared to land-sharing)?

Which future would you rather live in: A) a world where every person is healthy and happy, but wild nature is gone, or B) a world where the problems of today persist, but most wild species have survived?