

NATSC 203 Humans, environmental change & sustainability

Time: Tuesday & Friday 2:00-3:20

Location: MNS 200

Instructor: Dr. Loren B. Byrne

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Office Hours: Mondays 2-3pm, Tuesdays 1-2pm, Fridays 1-2pm, or by appt.

Quotes that summarize Dr. Byrne's teaching and learning philosophy:*"The mind is not a vessel to be filled but a fire to be kindled."* ~ Plutarch*"Teachers open the door. You must enter by yourself."* ~ Chinese proverb*"(Intelligence) is 1% inspiration and 99% perspiration."* ~ Thomas Alva Edison*"Today a reader, tomorrow a leader."* ~ W. Fusselman*"When we try to pick out anything by itself, we find it is tied to everything else in the universe."* ~ John Muir*"High-quality learning is absolutely essential for high-quality living."* ~ L. Dee Fink**Course description:**

This course examines the effects of human populations and sociocultural variables on contemporary environmental changes at global and local scales with an emphasis on the sustainable use, management, and conservation of natural resources, biodiversity, and ecosystem services. Topics covered include human demographics, land use and land cover change, energy generation and use, agricultural production, biodiversity issues, water management, pollution and global climate change. These topics will be discussed in an interdisciplinary context to emphasize interrelationships among the economic, political, philosophical and ecological dimensions of environmental change and the sustainability of human populations and ecosystems.

Be forewarned: this course is reading and discussion intensive! (This is a good thing for your education—see quotes 3 and 4 above.) Lectures will constitute a minor part of class time and will mostly be used to illustrate topics covered in the texts with case studies, diagrams, images, etc. Thus, you will maximize your learning during this course if you read assigned texts carefully and critically before class and then ***engage with your classmates in civil discourse*** about the material during class.

General course goals:

After this course, students should be able to:

- Describe changes in the biological and cultural characteristics of human populations throughout human history
- Articulate an interdisciplinary understanding of relationships between human sociocultural variables and contemporary environmental changes
- Describe relationships among human well-being, environmental quality, biodiversity and ecosystems
- Exhibit increased awareness of sustainable methods for human-use of natural resources
- Exhibit improved communication and critical thinking skills as related to the examination of human-environment interactions
- Appreciate the pursuit of interdisciplinary, scientific knowledge and understanding!

Required texts

McNeil, J.R. 2000. *Something New Under the Sun*. WW Norton & Co., New York, NY.

Other readings to be provided digitally or as hard-copies

Important dates:

September 17 - last day to drop the course without receiving a W

October 19 - last day to drop the course and receive a W

Assignment submission & communications:

The professor uses Bridges for submission of assignments and to provide course materials. Email (.rwu accounts only) is also used regularly to provide course information and communicate important reminders.

Academic support services

If you are a student with a disability and you wish to receive academic accommodations for any aspect of this course, you must first register with Student Accessibility Services on the second floor of the University Library in the Center for Academic Development. All students wishing to receive accommodations must inform the professor and submit required forms **7 days** (\pm 1 day) in advance of the date for which accommodations are sought.

Attendance policy:

Because we form a learning *community* in this course, the presence and participation of each student in each class benefits us all. Thus, attendance is expected (*read: required*) for all class meetings. Excused absences will be granted only for legitimate reasons (severe illness or other extenuating circumstances such as family emergencies) and only when the student informs the professor (by email is OK) in advance of the expected absence (ASAP or at least 12 hours notice for emergencies or illness).

- If you will miss class for legitimate religious observances, you must inform the professor ASAP.
- You will not receive credit for missed in-class work or exams due to unexcused absences.
- NO MAKE-UP opportunities will be given to earn points for missed in-class work.
- Students are responsible for turning assignments in on time even if they miss the class period when the assignment is due. *Points will be deducted* from all assignments turned in late.

Academic integrity and classroom civility (including cell phone policy)

By becoming an RWU student, you have agreed to abide by the Academic Integrity pledge (“...to pursue the highest ideals of academic life... to be honest...”) which means that you will not cheat, fabricate information, plagiarize, be fraudulent or damage others’ work. The University Statement on Plagiarism in the Undergraduate Catalog reads: “A first offense may result in failure of the course involved, plus an entry on the student’s permanent record. A second offense is punishable by expulsion from the University.” **So don’t plagiarize!** I have become skilled at finding plagiarism and will have no problems documenting this or any other instances of academic dishonesty in any student’s permanent file and/or allowing the student to fail the course.

In addition, maintaining academic integrity (e.g., civility) includes respecting others and learning how to disagree with ideas while not being disagreeable. All students should respect their classmates and the learning environment of a classroom; this includes not being disruptive by talking out of turn or texting on mobile devices! **Such disruptions are distracting and disrespectful to the professor and students and will not be tolerated.** Any student who violates these classroom policies will bear the consequences following the definitions, policies and procedures described in the University Catalog. In addition students may be asked to leave the classroom if they do not conduct themselves civilly or cannot refrain from texting in class. In such instances, the student will receive an unexcused absence with loss of credit for in-class activities.

Required assignments & grading:

Students’ grades will be based on the following:	% Value of final grade
➤ Home- and in-class work (including half-sheets, quizzes, group work)	26
➤ Human evolution & ecology synthesis essay	15
➤ “Story of Stuff” research report (with proposal & draft)	26
➤ “Stuff” presentations	10
➤ Final paper	18
➤ Final discussion or presentation	5

Grading scale and the meaning of grades:

A= ≥ 93% - Excellent A- = 90-92.9% Great B+ = 87-89.9% Very Good B= 83-86.9% Good B- = 80-82.9% Good
C+ = 77-79.9% Average C = 73-76.9% Average C- = 70-72.9% Average D= 60-69.9% Poor F= ≤59.9% Failure

Suggestions for improving your success in this (and all) classes:

- Actually do the readings! This will help increase your success as a student, citizen and biologist.
- Spend ≥2 hours per class period outside of class (≥6 hrs per week) reading, studying and working on projects.
- Maintain a list of vocabulary words and their definitions; learning words and how to use them correctly is essential to becoming a successful and respected person/scientist/student!
- Write down questions and muddy-points in your notes and ASK about them discuss in class.
- After each class, write down several questions from the reading and info covered in class that you think would make good exam questions. (These could be given to Dr. Byrne to actually use!)
- Work with classmates to improve your learning! Study together, edit each others’ papers, etc. (But make sure you DO YOUR OWN WORK!)
- **Remember: Ultimately you are responsible for your own learning! No one else but you can rewire the neurons in your brain to generate personal understanding and knowledge.**

NATSC 203 Humans, environmental change and sustainability: Semester outline

Week	Topic	Readings (<i>complete before class</i>) (MN = McNeil) * indicates when readings may be divided among students
1	8/31: Introductions to course & content	
2	Part I: So Human an Animal 9/4: What are the origins & early evol. of humans? 9/7: What is culture & how does it change?	9/6: Diamond 32-39, 47-51, Tattersall, Takacs-Santa (TS) 51-55, Ehrlich 232-238 9/9: TS 55-58, Pagel & Mace, Ehrlich 255-261
3	9/11: Energy, revolutions, & global paradigms 9/14: Why do people do what they do? Norms, worldviews, behavior, lifestyles, consumption	9/13: TS 58-62, MN 10-16 & Ch 10 9/16: MN 326-336, Ehrlich & Levin, Byrne
4	9/18: The human predicament: a part of or apart from nature? 9/21: Past, current & future human demography	9/20: Ehrlich 3-14, Karieva et al., Liu et al. 9/23: Zhang et al., MN 270-281, Cohen
5	Part II: 20th C. Anthropogenic Env. Change 9/25: Introduction & overview 9/28: Lithosphere: soil & agriculture	<i>(Stuff project proposal DUE on 27th)</i> 9/27: MN xxi-17, MEA, Ehrlich & Kennedy 9/30: MN 21-26, 212-227
6	10/2: Lithosphere: erosion, mining & pollution 10/5: Atmosphere: urban pollution	10/4: MN 26-49 (<i>HEE essay DUE</i>) 10/7: MN 50-83*
7	10/9: <i>No class – Monday schedule</i> 10/12: Atmosphere: regional pollution & acid rain	10/14: MN 84-108*
8	10/16: Atmosphere: climate change 10/19: Atmosphere: the ozone & beyond	10/18: MN 108-111, others TBD* 10/21: MN 111-117
9	10/23: Hydrosphere: water use & pollution 10/26: Hydrosphere: water abuse & control	10/25: MN 118-148* 10/28: MN 149-191*
10	10/30: Biosphere: forestry 11/2: Biosphere: ocean life	11/1: MN 228-236, others TBD* 11/4: MN 237-252, others TBD*
11	11/6: Biosphere: altering global biodiversity 11/9: Noosphere: urbanization & globalization	11/8: MN 252-266, invasive species website 11/11: MN 281-295, Capra, Wessels
12	Part III: Toward sustainability 11/13: What is sustainable progress? 11/16: Feeding the masses sustainably	11/15: Capra, Wessels, others TBD 11/8: TBD
13	11/20: Energy generation & efficiency 11/23: <i>No class- Thanksgiving break</i>	11/22: TBD 11/25: TBD
14	11/27: Conserving ecosystems & their services 11/30: Environmental ethics, politics & policies	11/29: Goodall selection 12/2: MN 336-356
15	12/4: Stuff presentations 12/7: Stuff presentations	
16	12/11: Synthesis: Is sustainability achievable?	12/14: Friedman 2009; “Green isn’t B&W”

FINAL EXAM PERIOD: Mon. Dec 17, 4-6pm: Required discussion or presentations; *final paper due*

****The professor reserves the right to modify this schedule at any time if necessary****

Assignments overview: Home- and in-class work includes quizzes, in-class reflective writing and projects as well as reading worksheets. Quizzes, based on assigned readings and lectures, will assess student learning and understanding of basic vocabulary, facts and principles as well as develop higher-level critical thinking skills such as application of concepts to problems. Reflective writing will be used to foster student engagement with their own opinions, values and beliefs as well as reflection on their own learning processes and progress. Other in-class projects (including group work) and homework assignments will be used to facilitate student engagement with course content and promote critical thinking skills. Assessment and point values for individual assignments will vary; in general, points will be awarded for correct answers (quizzes, homework) and completeness (projects, reflections). No points will be earned for assignments missed due to unexcused absences.

➤ See reverse for first paper assignment. Details about the others will be provided in a timely fashion.

Human evolution & ecology synthesis essay
DUE via Bridges on October 4, 2011 @5pm **15% of final course grade**

Your objective:

- Write a well-organized, 5-6 page synthetic review essay that explains some of the most important and unique biological and cultural evolutionary and ecological characteristics of humans

Requirements:

- Essays should include 1) a title, 2) general introductory paragraph with **both 3) objective and 4) thesis statements (see below for descriptions of these)**, 5) the body that supports your thesis and meets the objective and 6) a general conclusion paragraph at the end
- Both biological and cultural evolutionary characteristics should be discussed
- For human ecological characteristics, think about relationships between cultural and environmental variables in addition to basic ecological variables (e.g., demography, food web relationships)
- The essay should be broad in scope and scale; do not focus on one or several variables, time periods, or cultures at the exclusion of others. Specific examples could be used to support general ideas but the essay should be holistic and relate generally to *Homo sapiens* as a species (and its recent ancestors).
- At least **9 references** must be cited in the text and included in a reference list at the end.
 - 7 references must be from the assigned class readings (your choice among assigned readings from Sept 7-24; MN & TS each count as one, while there are 4 separate Ehrlich readings)
 - 2 references must be from the “extra” readings posted in Bridges (your choice)
 - For proper citation and the reference list formatting, follow the guidelines posted in Bridges

Tips for writing a more effective essay:

- Create your objective and thesis statements first; then outline the rest of the paper to create an argument that supports these statements. *These two statements should be easily identifiable by the reader.*
 - The **objective statement** clearly and concisely states what the goal of the paper is—what you hope to achieve in the body. It can be stated explicitly with the form: “The objective of this paper is...”
 - The **thesis statement** summarizes the paper’s main “argument” or conclusion that is explained in the body of the paper. It essentially fulfills the objective in one sentence.
- Write a list of the most important points on index cards and arrange them into a coherent order that will tell a good story and creates an effective flow of ideas.
- Although the essay should be scientifically accurate, you can be creative. Tell a scientific “story” that is interesting and keeps the reader’s attention (although don’t write a storyline with characters and a plot).
- A long book could be written about this topic (in fact, many, many books have been written on this topic). You don’t have the time to write a book. Thus, you should choose a handful of only the most important topics to discuss in the paper. You should probably choose a set of topics that can easily but effectively be linked together into a coherent narrative (e.g., focus on a sub-theme that you develop).
- Visit Dr. Byrne’s writing website (link in BB) for writing details to pay attention to that will help you improve your writing skills (and score!)

Assessment criteria:

The final essays will be scored using a rubric containing the following factors:

- Required content: the essay contains the required parts as outlined above (incl. thesis & objective)
- Accurate content: the essay conveys an accurate understanding of the material
- Organization: the essay’s content is ordered in a logical and easy to read structure, including sentence and paragraph structure
- English mechanics: correct grammar, spelling, word use and punctuation ,
- References: the required number is cited and in a reference list, with proper formatting
- Overall success: essay is readable and effectively conveys an interesting synthetic narrative