**Sustainability 201 Nature & Society**

**Fall 2022 WEL 130**

**Class Meets MW 2 - 3:50**

**Instructor: Michael S. McGlade, Ph.D. (**he, him, his)

Office Hours: M 4-6 (Bellamy Hall 211); W: 4:30–5:30, 7:15-8:15 (Vick 129); Zoom: T 8-9 am (link in Canvas)

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This course fulfills part of the general education requirement GEK Scientific Perspectives.

Required Readings, Books, and Documentary Accesses to Purchase:

-Montgomery, D. & Bickle, A. (2016). The Hidden Half of Nature. New York: WW Norton & Co.

I recommend that you get the printed rather than ebook versions of this book.

-There will also be pdf readings posted on Canvas, in addition to book.

-You should also set aside about $10 for documentary access. Details to be announced.

-It is recommended that you periodically access a printer to print out all reading and video viewing questions. The notes you take on them, and the other materials posted in Canvas, together with lab topics, will be the primary material that each of the four exams draw on. Rather than printing, you may manually write down each question and then also your answers. Your answers to all these questions are your study and source materials for exams. Exams will have two sections. The first section is closed note, the second open note. Please be advised that I may revise the statement of the previous sentence as term progresses. Total estimated cost of course, including book, printing, & documentaries: ~$39.

Course Description: We will study the various components of the natural environment, including the nature of the physical elements, the process involved in their development, their distribution over the earth, and their basic interrelationships. The relationships between nature and society are threads extending through much of the material.

Course Outcomes

\* Analyze interrelationships between humans and the environment (Inquiry & Analysis)

\* Students understand natural forces that affect/determine human existence such as climate, water resources, soil fertility, and geo-tectonic forces

\* Students understand climate change impacts, causes, and solutions

\* Students understand sustainability in a geographic framework of social, economic, and natural environments

Course Requirements: It is your responsibility to view notes and their linked videos, and do the assigned readings and write down notes to all questions. Exams will consist mostly of multiple choice, true false, short answer, and short essay questions. No make-up examinations will be given except in the most unusual of circumstances, and must be arranged prior to the exam being missed. Attendance is required.

Three or four laboratory projects will be assigned. To avoid frustration, please do not attempt these until you have studied the reading and notes that pertain to them. There may be brief quizzes to reinforce learning. More on this later! Stay tuned to Canvas. We also will use some type of participatory forums. Minor quizzes and forums may add more points possible to the list that follows:

Approximate points possible (subject to change)

|  |  |
| --- | --- |
| Activity | # points |
| 4 tests (100 pts. each) | 400 |
| labs | 300 |
| quizzes | 50 |
| total | 750 |

Grading scale is A: 90-100, B: 80-89, C: 70-79, D: 60-69, F < 60.

Plus and minus system used for upper and lower 2 percent.

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| Dates | Topic(s) | Core Reading/Viewing\* |
| Week 1  Sept. 26, 28 | Introduction to Nature, Society and Science; Planet Earth; Earth Sun Relationships | Patrich, Units 1, 5 <https://drive.google.com/drive/folders/1jHwx-yCtFKTpl8nrfpQPWfD_d3kQqz1F>  Or if above doesn’t work, use this: <https://open.umn.edu/opentextbooks/textbooks/926>  (after opening, click on orange pdf button)  See Canvas for more |
| Week 2  Oct. 3, 5 | Earth-Sun Relationships (cont.), Composition & Structure of Atmosphere, Atmospheric Radiation, Temperatures  Worksheet Lab: Solar Altitude | Patrich, Unit 6, through page 9 only: (use links in Week 1 above);  See Canvas for more;  Mann, Preface & Chapter 1(pdf) |
|  |  |  |
| Week 3  Oct 10, 12 | Atmospheric Radiation, Temperatures  **Worksheet Solar Altitude due October 10** | See Canvas for more;  Mann, Preface & Chapter 1(pdf) |
| **Oct 12** | **Exam #1 Wednesday, in-person** |  |
| Week 4  October 17,19 | Atmospheric Circulation, Moisture  **Lab assigned: Are Oregon Summers Becoming Warmer and Drier?** | Patrich, Unit 6, pages 10 - end  Patrich, Unit 7  <https://drive.google.com/drive/folders/1jHwx-yCtFKTpl8nrfpQPWfD_d3kQqz1F>  See Canvas for more  Mann, Chapters 2-3 pdf |
| Week 5  October 24, 26 | Climate Change | [Earth an Operators Manual documentary viewing questions.docx](https://www.wou.edu/~mcgladm/Geography%20105%20%20Physical%20Geography/for%20exam%203/climate%20change/causation/Earth%20an%20Operators%20Manual%20documentary%20viewing%20questions.docx);  Other materials TBA |
| Week 6  **October 31** | **Exam 2 Monday** |  |
| **November 2** | **Lab due: Are Oregon Summers Becoming Warmer and Drier?** |  |
|  | Sea Level Rise, Ocean Acidification | Kolbert 111-124 (pdf)  See Canvas for more |
| Week 7  November 7 | Marine Ecosystem Change & Collapse | Kolbert 125-147 (pdf)  See Canvas for more |
| **to be announced** | **Lab due via e-mail: How Scientists Date the Earth** |  |
| Week 8  November 14 | Soil Formation and Degradation  Primer on Plate Tectonics | Patrich Unit 12  TBA |
|  | Soil Regeneration | Montgomery & Bickle Reading Questions: (pages 1-5, 28-34) |
| **November 16** | **Exam 3 Wednesday** |  |
| Week 9  Nov. 21, 23 | Soil Regeneration | Montgomery & Bickle Reading Questions: (pages 64-88, 89-108)  Montgomery & Bickle, 224-243 |
| Week 10  Nov 28, 30 | Scientific Explanation: Causal Mechanisms driving Climate Change, Accelerated Rates of Environmental Degradation & Species Extinction | Montgomery Green Manure 90-114 (pdf)  Montgomery & Bickle Reading Questions: (pages 224-243)  Scientific Explanation: TBA |
|  | **Lab (topic & due date tba)** | See Canvas for more |
| **Finals Week**  **Wednesday Dec. 5, 12-1:50**  **(different time)** | **Exam 4 (not comprehensive)** |  |

\*other topics may be assigned; with Canvas being the final authority. Note that all subjects and activities are subject to modification because of the unusual circumstances caused by COVID-19.

Academic dishonesty consists of representing the work of others as your own and/or using notes or other aids completed by others during an examination. Students who engage in such actions may receive no credit for the assignment or examination in question and will be subject to University discipline as outlined in the Code of Student Responsibility. If you have further questions, please consult the Social Science Division policy on academic dishonesty and the Code of Student Responsibility: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://wou.edu/studentconduct/files/2017/10/CSR-09.01.17.pdf

*WOU values diversity and inclusion; we are committed to fostering full participation for all students. Please notify your instructor if there are aspects of the instruction or design resulting in barriers to your participation.*

*Disability related accommodations are determined through the Office of Disability Services (ODS). If you, as a student, believe you may be eligible for disability related accommodations please contact ODS, they would be happy to work with you. ODS notifies students and faculty members of approved academic accommodations and coordinates implementation of accommodations.*

*Academic Programs Services Center (APSC) 405*

*503-838-8250 (voice)*

*https://wou.edu/disabilityservices/*

*ods@wou.edu*